

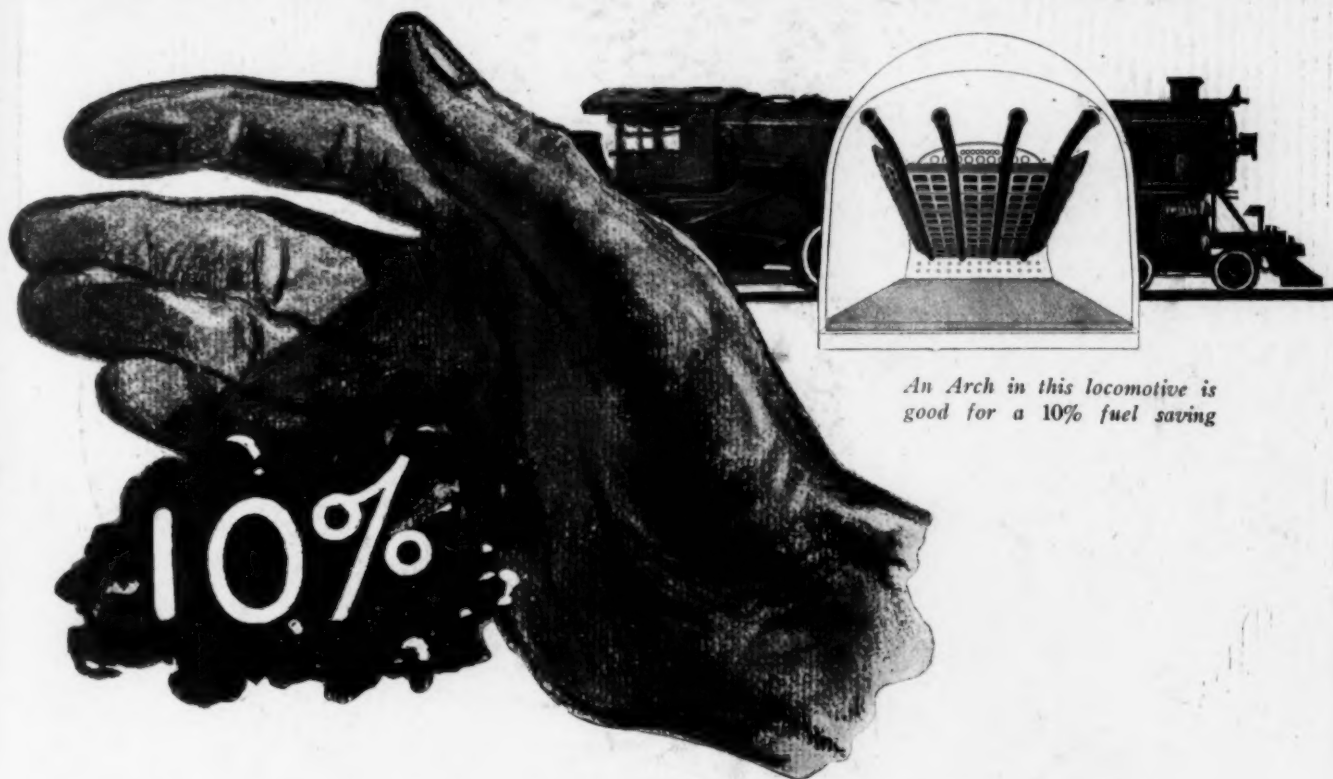
SEP 3 1924

Railway Age

SECOND HALF OF 1924—No. 9

NEW YORK—AUGUST 30, 1924—CHICAGO

SIXTY-NINTH YEAR



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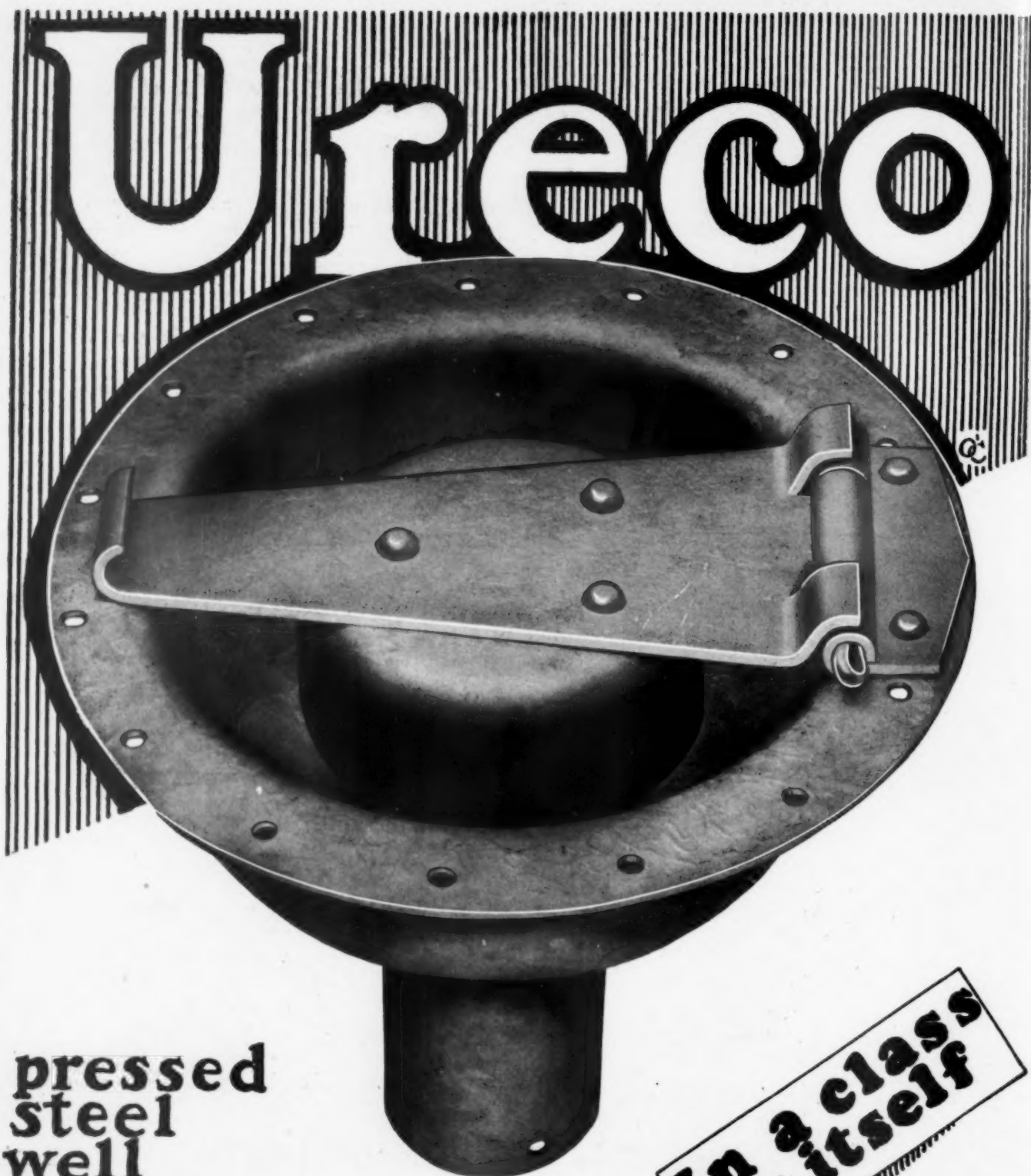
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EDITORIAL

Railway Age

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At Cranford, N. J., last week occurred a train accident which only a few years ago could have been called unique—a de-

Another Derailment at a Highway Crossing railment to a fast passenger train when it struck a motor truck at a highway crossing. Unfortunately derailments from this cause seem to be on the increase. Happily not all of them result in casualties to railway passengers and employees, but that danger always exists. Moreover, every motor vehicle which a train strikes is a potential trainwrecker. Is the time approaching when the railways, for the safety of their trains, will have to come to regard the highway grade crossing as a source of danger comparable to a grade crossing with another railway and requiring the same kind of signal protection?

In the construction of larger passenger terminals, an adequate interlocking plant is considered, and justly so, as a

Interlockings for Convenience or Economy? necessary part of the property if trains are to be handled safely without delays. The same idea is carried out to some extent in the larger freight classification yards, but the majority of roads

fail to provide interlocking facilities for the smaller yards. In freight switching the factor of safety is not so exacting, yet the economies derived are, in many cases, far greater than in passenger station layouts. Interlocking plants are now being installed on the basis of the number of switchmen relieved and are showing economy aside from the increased facility of train movements. One factor contributing to this result is the adaptability of the electro-mechanical plant, with which near-by switches may be handled mechanically while the signals and out-lying passing track switches are operated electrically. There are many medium size and small yards where the installation of an interlocking plant will show economies and it will pay to investigate these possibilities.

The kind of cinder handling equipment provided at engine terminals has a direct bearing on the time locomotives must

Study Cinder Handling Costs spend at the cinder pits and on the cost of cinder disposal. From either point of view, sufficient expense is involved to justify the railroads in making a careful study to determine the

type of cinder handling facilities which will be most effective at each terminal. One well-known road, after making such a study, installed a modern power-operated cinder plant which displaced the wheelbarrow method originally used with an annual saving of over \$7,000. At this rate the cinder plant will pay for itself in 14 months. The studies which railroad men make regarding the respective merits of different cinder handling methods should be comprehensive, including for each terminal all methods apparently suited to the particular conditions involved. All elements of cost should be analyzed and the estimated savings presented in a condensed, quickly understandable and convincing form. Figures of this kind cannot fail to make an impression on a vice-president or general manager when he is called on

to decide which of a large number of A. F. E.'s is most important. If railroad engineering and mechanical officers will back up their requests for better shop and terminal facilities with a business-like statement of costs and savings they will obtain more nearly just share of the appropriations available.

Mr. Bruère's prize winning paper in the *Railway Age's* contest on co-operation between employees and management,

The Sine Qua Non of Co-operation

in which he emphasized the importance of stability of employment in establishing a basis for co-operation, was published in the *Railway Age* of June 28, 1924. Since then we have pub-

lished a number of letters discussing his paper favorably and otherwise, mostly the former. None of these letters, apparently, disagree with one of the most important points which he made, viz., that instability of employment is the arch enemy of co-operation. This fact might seem fairly obvious but it is too important to be allowed to pass as self-evident. Indeed, it is so important that it might almost be said that, while steady employment and reasonable certainty of tenure will not alone guarantee cordial relations between men and management, such relations are otherwise practically impossible. It is probably impossible for a railroad or any other industry to keep always a constant force of employees through good times and bad. When business is brisk new employees must be hired and when business is slow some reductions in forces must be made. Careful study and careful planning plus the will to do the best it can by its employees, however, would enable railway management to reduce the fluctuation in forces to a minimum. The result would be a larger proportion of employees who would be assured of steady work and the larger this group is in proportion to the total number of employees, the more likely to succeed would be employee relations work along other lines. Steadiness of employment for the greatest possible number of employees—a worthy goal for railway management and one the striving for which would arouse more of the spirit of co-operation on the part of employees than any number of appeals without such concrete evidence of good faith.

With the growing scarcity of hard woods during the last two decades the railways have been compelled to turn more

An Object Lesson

largely to the soft woods for their requirements for cross ties, but it was during the period of the World War, and particularly under government operation, that the transition from hard

to soft wood was effected in the most drastic manner. While this change introduced many new problems, it was met without difficulty by roads which had been using soft wood ties in considerable quantities for years and which appreciated the need of preservation and had an adequate realization of the limited strength and resistance which the softer wood offered to the wearing and crushing action of the wheel loads. However, on some of those roads which had continued the use of oak and other hard woods during the gradual transition, the sudden change to soft wood was met without an adequate study of the problems which this change

involved, particularly on lines carrying heavy traffic. In addition to the necessity for treating the ties, which was more generally recognized, the change called for the more general use of tie plates, which, under the limitation placed on the purchase of steel products during the latter portion of the war period, was not carried out to the extent which the conditions demanded. But even where tie plates were introduced there were cases where the plates obtained were of inadequate size or improper design. Some of the plates offered little more bearing surface than that afforded by the contact area between the tie and the base of the rail, while in some instances they were of obsolete design with sharp ribs or prongs on the lower side which cut into the wood fibers in a way that greatly reduced their resistance to crushing. In a measure, war conditions may be said to absolve railway managements from some of the unfortunate practices to which they were committed, the effect of which is now becoming evident in the all too short service being obtained from the ties inserted during that period. This experience should serve, however, to emphasize the necessity for the use of tie plates designed to meet the requirements of present day conditions.

The Mississippi Central, a railroad 176 miles long, Beaumont, Miss., westward to Natchez, using 20 locomotives and

"The Public Is Always Right"

operating two passenger trains each way daily, is trying a very interesting experiment, as will be seen by its advertisement, copied in the news columns, announcing its policy to be "The public is always right." The condition is added that if the public itself imposes unreasonable restrictions the rule may on occasion have to be suspended. We call this an experiment because the innovation is slightly different from those of a similar character which have been introduced in other places. "The guest is always right," the motto in certain hotels; and "The customer is always right" as certain stores profess to be able to say, are two different propositions; and "The public is always right" is different still. It may not be practicable to carry out all of these three policies with equal facility and satisfaction. Students of this phase of sociology will want to see comprehensive reports of what results are obtained in different situations. The bell-boy, the waiter, or the chambermaid in a hotel may have a problem that hinges wholly on the ability (the fruit of experience) to speak softly and serve humbly under trying circumstances. The salesman in a store may have this problem with the added complication of a direct and immediate financial question involving dollars, or perhaps hundreds of dollars. The railroad freight agent is required to have all the quick wit or wisdom here suggested, with the additional feature which is imposed by the fact that "the public" is a very vague entity. For example, the agent of a road earning 20 per cent on its stock who has to deal with a shipper whose freight bill is too high. He needs all the experience and broad knowledge of a Philadelphia lawyer. In talking to the one shipper he is called upon to consider the grievances of a thousand shippers. Telling "the customer" or "the public" that he is right often means only that you will assume such to be the case pending a suitable opportunity to convince him that he is wrong. It is not a final statement. With the Interstate Commerce Commission taking a hand in the fray at the rate of several hundred decisions yearly, the ultimate settlement of the petty controversies that arise in the railroad agent's everyday business may take weeks or months to accomplish. The railroad man's knowledge must be co-extensive with the vagueness of "the public"; that is, must spread itself over the whole country. The modern station agent or passenger conductor who wishes to cultivate his mind by studying in his evenings to better qualify himself for his job, certainly has an ample supply of materials on which to work.

Four Years Under the Transportation Act

IT IS JUST FOUR YEARS since the large advance in rates granted by the Interstate Commerce Commission in 1920 went into effect and the guarantees of net return made by the government for the first six months following the return of the railways to private operation expired. With the expiration of the guarantees the last of the measures made necessary by the government's wartime venture into the field of railroad management ceased to operate. Since that time the Transportation Act and regulation and private management of the railways under it have been the subject of a vast amount of discussion. This discussion is not yet ended. It has necessarily been extended into the present national political campaign by the declaration in the platform of one of the great political parties in favor of overhauling the Transportation Act and by the declaration of the LaFollette radicals in favor of the act's repeal and the adoption of government ownership.

The present is, therefore, an opportune time to review again what actually has been done, or not done, in the management and regulation of the railways since the Transportation Act has been in full effect.

Within the last four years there have been great changes in volume of traffic, in wages, in total operating expenses, in rates and in earnings. What in a general way have been the results of these changes? This question can best be answered by comparing statistics for September, 1920, the first month after the large advance in rates went into effect, with statistics for June, 1924, the latest month for which they are available.

The traffic of the railways in September, 1920, was substantially larger than in June, 1924. This partly accounts for the wide differences between the statistics for the two months. It only partly accounts for these differences, however. The reduction in the operating expenses of the railways due to reductions of wages and increases in the efficiency of management, and the reductions in total earnings which have been partly due to reductions of rates, have been far larger in proportion than the decline of traffic.

In September, 1920, the large advance in wages which was granted by the Railroad Labor Board in July of that year was in full effect. The operating expenses of the Class I roads averaged \$16,991,000 a day. In June, 1924, the operating expenses of these roads averaged only \$12,139,000 a day. This was a reduction of \$4,852,000 a day as compared with September, 1920, and a reduction of \$2,171,000 a day as compared with the last month of government operation.

Between December, 1917, at the end of which the government took over the operation of the railways, and February, 1920, at the end of which it returned them to their owners, the operating expenses of the Class I roads increased more than \$6,200,000 a day. Within the last four years the railway managements have not only wiped out all the increase in expenses that occurred after the railways were returned to their owners, but they have also wiped out more than one-third of the increase in expenses that occurred under government operation.

How has this vast reduction of operating expenses been effected? It is partly due to a reduction of daily and hourly wages. The reduction of wage rates between September, 1920, and June, 1924, saved the railways in the latter month \$1,710,000 a day. It was also very largely due, however, to a reduction of the number of employees. The number of employees in June, 1924, was about 365,000 less than in September, 1920. The railways in 1920 were only slowly recovering from the effects of government operation and still had an excessive number of employees. This

reduction in the number of employees accounted for \$1,576,000 a day of the reduction of operating expenses. The remaining \$1,566,000 a day of the reduction of expenses was due to other causes including, of course, the decline of traffic.

How much of this reduction of expenses has been passed along to the public in a reduction of the amount paid by it for railroad transportation? The total earnings derived by the railways from rates in September, 1920, were \$20,631,000 a day and in June, 1924, only \$15,522,000 a day, a reduction of \$5,109,000 a day. Furthermore, the railways in June, 1924, paid \$126,398 a day more in taxes than in September, 1920, which makes the total direct and indirect saving in the cost of transportation to the public more than \$5,235,000 a day.

Since the direct and indirect reduction in the cost of transportation to the public has been over \$5,235,000 a day and the reduction of operating expenses \$4,852,000 a day, it necessarily follows that the public saved \$383,000 a day more than the railways saved in operating expenses. The effect of this is shown by the net operating income of the railways. The net return received by them in September, 1920, averaged \$2,656,000 a day, while in June, 1924, it averaged only \$2,185,000 a day.

In view of the record actually made under the Transportation Act it is one of the most amazing facts in the history of the country that it should be the object of such criticisms as are made regarding it and that the criticisms should come from the sources that they do. The onslaughts upon it are being led by railway labor leaders and the political candidates that they are supporting. Now, while railway wages have been reduced under the Act they were also increased under it, and in every year, and every month, since it has been in effect railway employees have received higher wages than they ever did before.

In view of the great economies in operation the railways have achieved within the last four years and of the fact that they have never earned anywhere near the net return to which the Interstate Commerce Commission has held they are entitled, it is plain that if anybody has cause to complain about the way the Transportation Act has worked thus far it is not the railway employees or those who pay freight and passenger rates but the managers and security owners of the railways.

Pullman Surcharge and "Fair Return"

ONE IMPORTANT FACTOR in the railway situation which is persistently ignored by many persons and organizations that attack different parts of the freight and passenger rate structure is the imperative necessity for the railways to earn adequate net returns. Everybody concedes in theory that the railways must earn an adequate net return if they are to be able to render good and adequate service, but the theory is constantly more honored in the breach than in the observance by those who want to travel or ship goods at less cost.

This is well illustrated by the continuance of the attacks upon the Pullman surcharge. The surcharge has been defended by spokesmen of the railways before the Interstate Commerce Commission chiefly upon the ground that it costs a railway more to carry a passenger in a Pullman car than in a day coach. Undoubtedly, as far as practicable, rates should be fixed with regard to the cost of service, but the total cost of rendering the service as well as the cost of rendering particular services must be considered, and a fair return for the railways is a necessary part of the total cost of service. Now, the railways last year derived about \$37,-

000,000 in earnings from Pullman surcharges. Neither last year nor in any other year since they were returned to private operation, however, have they earned an adequate net return. The abolition of the surcharge would reduce the net return by an amount practically equivalent to all the earnings derived from it. Therefore, the abolition of the surcharge would make the net return earned by the railways still more inadequate than it is and has been.

Those who attack the surcharge have no responsibility for the net return of the railways, but the Interstate Commerce Commission has. It would have this responsibility even though the Transportation Act did not specifically direct it to so adjust rates as to enable the railways to earn a fair return, and besides, it has a specific mandate in the Transportation Act to do this. Necessarily, therefore, if the commission is to perform the duty imposed on it by law it must, when it considers the surcharge question, also consider from what source, if the surcharge is abolished, the revenue thus taken away is to be derived.

Are freight rates to be increased to offset the loss? Are the passenger rates paid by all passengers, including those who ride in coaches, to be advanced? Is a special advance to be made in passenger rates for those who travel in sleeping and parlor cars? Are new rates to be put in effect for the handling of baggage? Are mail or express rates to be advanced? One or more of these measures must be adopted if the Interstate Commerce Commission is to perform its duty. Even under the rates now in effect and with a record-breaking traffic, the railroads last year earned only 5.1 per cent on their valuation, and in the first six months of the present year they earned \$56,000,000 less net return than in the corresponding months of last year. Whatever others may do, the members of the Interstate Commerce Commission cannot ignore the necessity for fixing rates that will enable the railways to earn an adequate net return without stultifying themselves and disregarding their lawful duty.

A Suggested Cost Accounting Plan

AT THE ANNUAL MEETING of the Railway Accounting Officers' Association held at San Francisco in July there was read a letter from Joseph B. Eastman of the Interstate Commerce Commission. The letter dealt primarily with the proposed revision of the classification of operating expenses. One paragraph or section of the communication was devoted to cost accounting and, with reference to that phase of the subject Commissioner Eastman wrote in part as follows:

"Our classifications of operating expenses up to date have been primarily classifications of expenditures. Only in some instances have they approached cost accounting. The tentative revision follows the same plan. It may be that a classification of operating expenses on a satisfactory cost accounting basis is impracticable, but I am confident that the question is one which the commission will be called upon to face. . . . Would a cost accounting classification of operating expenses afford a better basis for determining relative efficiency and economy of management and the reasonableness of maintenance expenses?"

Commissioner Eastman is a keen analyst and by no means the least of his assets is his ability to get at the point of an involved argument with a directness that sometimes proves disconcerting. No doubt there are many railroad men and others who have had that fact brought home to them when, in testifying at Interstate Commerce Commission hearings, they have been confronted with a well turned question asked them by Mr. Eastman. It was in interrogatory form that the commissioner put much of the essence of the cost account-

ing problem in his letter to the accounting officers. Inasmuch as the question was followed by the remainder of the letter itself it did not stand out in the reading in its full significance. Placed alone where it can be studied in its proper light, it is much like many other of Mr. Eastman's questions—to the point and disconcerting to anyone who may have to answer it.

Of course, Mr. Eastman did not express an official view when he said that he was confident that cost accounting is a question which the commission will be called upon to face. His expression of his own view to that effect is significant, nevertheless, because it indicates that the cost accounting idea has made progress in railway circles and may yet make more. Cost accounting may, by some eventuality, offer a way out of the impasse to which the discussion of the proposed revision of the operating expense classification has come. If it ever does furnish the means of cutting what has apparently turned into a Gordian knot, we prophesy that many moons will wax and wane before the Interstate Commerce Commission issues its instructions for the revision. Cost accounting, by and large, is a new and untried element in railroad management control. Cost accounting advocates have been slow to make themselves known. They have offered thus far but little material from which one can draw conclusions as to whether their ideas are practicable or not. The most important argument of all has thus far been hardly touched upon. That argument, of course, is as to whether the savings and assistance to management control that may possibly accompany a cost accounting plan will be such as to justify the increased costs of the intricate detail that will prove necessary.

We agree, however, with Commissioner Eastman. We too are confident that in its consideration of the revision of the operating expenses classification the Commission may yet have to investigate the practicability of cost accounting. There may be nothing come of such investigation; there may be much. Study of the possibility of cost accounting will take time. Does not the situation as it stands with reference to this important factor further justify the *Railway Age* in its stand that the commission and the Railway Accounting Officers' Association should make haste slowly in any revision of the operating expense classification?

It is here that we change somewhat the previous tenor of this editorial. Elsewhere in this issue there will be found an article on the subject of cost accounting in the mechanical department. This article has been prepared by G. W. Armstrong, special representative in the mechanical department of the Erie. We will let the author tell his own story. He has offered a plan which he believes will so assist management control that it will justify its cost and he has been careful enough to prove his conclusion to that effect with actual figures and corollary evidence. We offer this article as a contribution to the discussion on cost accounting, but we go no further than that. It will probably be wise to point out that the article is not related to the more general subject of the revision of the classification of operating expenses. In particular, the plan proposes no change in the present classification. The plan described in the article is for the purposes of mechanical department control and the cost figures would still be recapitulated and turned over to the accounting department as its interest requires.

The reader of the article will, we are sure, be led to set himself thinking about certain important factors in connection with cost accounting. We shall indicate them without, at this time, discussing them. They are "If cost accounting is feasible, may it or may it not be utilized without change in the present classification?" and "Would not the railways be wise to do some studying of their own along this line and not wait until the science of the subject is suggested for incorporation in statistical requirements of the regulating bodies?"

Justification for Heavier Rail on Branch Lines

IN 1914 only 528,703 tons, or 27 per cent of the rail rolled in the United States and Canada, was of 100 lb. or heavier sections, while 1,465,850 tons, or 51 per cent, was of these sections in 1923. Thus in nine years the tonnage of 100 lb. and heavier sections nearly trebled while the percentage almost doubled. These rails have gone into main lines for the most part where they have provided a stronger construction to offset the increasingly severe service to which the track is subjected.

The effect of this tendency has not been confined to main lines, however, for much of the rail released by this new rail has gone into branch lines where it has in turn released rail of still lighter sections. The result has been that many branch line tracks have been strengthened likewise. On many of these lines the traffic has not increased to the same extent that it has on the main lines and the service to which the track is subjected is little more severe than a decade ago. On some lines the installation of heavier rail has made possible the use of heavier locomotives and has enabled the traffic to be handled by one train which formerly required two, but on others there has been little or no demand for heavier locomotives.

To justify the increased expenditure for heavier rail on lines of this character it is necessary that economy be effected in some direction if a net increase in operating expenses is to be avoided. At least one road has met this problem by decreasing the number of ties required per rail, respacing the ties as those whose service life has been exhausted are removed, and thereby reducing the number of ties required for renewal purposes until the new standard has been reached. While such a plan will meet with opposition from many roadmasters, it must be recognized that with a given traffic and a track sufficiently strong to carry it safely and with a reasonable maintenance expenditure, the use of heavier rail can be justified only where it makes possible a reduction in the labor required for maintenance or a decrease in other units of the track structure sufficient to compensate for the increased investment in the rail. This is a subject which warrants careful consideration as increasing quantities of rail of heavier sections is being released from main tracks, in order that track may be provided on the various lines sufficiently strong to meet the traffic handled on these lines with the minimum expenditure for maintenance.

Competition of Motor Buses

THE RECENT rapid development in the transportation of freight and passengers in motor buses over the public highways cannot be ignored by the railroads. Although still in its infancy, highway transportation has removed all doubt that it will eventually take an important place in our national transportation system. It has justified its existence by the services it can render better and more cheaply than the railroads. A considerable volume of traffic now carried as a matter of course by the railroads will sooner or later find its way to the motor buses. Thus the buses' gain will be the railroads' loss, and the loss will be too large to be overlooked.

A number of roads are now endeavoring in one way or another to protect themselves from this growing bus competition. Most of these attempts have been defensive moves, and as such are headed for failure, for battles are not won by defensive tactics. This has been recognized by the Chicago, North Shore & Milwaukee, an electric line operating between Chicago and Milwaukee, Wis. An article in the

Railway Age of August 16 described the aggressive way in which this road has handled the bus problem. Two years ago a number of bus companies were preparing to start operation in its territory. Immediately the railroad purchased a fleet of buses, opened up routes where they were needed, and began the intensive use of buses as feeders to its main line. The service offered was superior to that which smaller bus operators could provide. The result is that there are no competitive buses in North Shore Line territory today.

Railroads all over the country are finding motor bus competition a problem. It will be a much more pressing problem as time extends and intensifies the operation of the buses. The motor bus and the motor truck are here to stay. The railroads must recognize this fact, and they must determine on their methods of meeting this competition without delay. Like the North Shore Line, the railroads with their established stations, their reputation for regular service and their resources, are in an advantageous position. They can eliminate much bus competition, as the North Shore Line has done, if they will. The recent announcement of the Omnibus Corporation of America that it has a plan for contracting with railroads to establish motor bus feeder lines should be interesting to every railroad.

Competition from new sources is inevitable in the future. The days when the railroads afforded the only kind of transportation are over. Already we have the motor bus. Tomorrow the airplane will be in the fight for traffic. Disregard of the new developments in the field of transportation will be disastrous to any railroad.

A Way to Stabilize Maintenance Expenditures

THE DETERIORATION of railway fixed property is relatively uniform throughout the year, resulting as it does from the attacks of the elements and the wear and tear of traffic. While the repair of equipment can proceed throughout the year and thus keep pace with the deterioration, this is not practical with respect to a large part of the work on the tracks and structures because of climatic conditions, particularly in the northern part of the United States and in Canada. Even though marked progress has been made in the laying of rail and in the conduct of certain other operations during the colder months in the last few years it is still necessary to do a large part of maintenance of way work between April and October. As a result the net earnings of the roads during the early and late months of the year are enlarged by their inability to make repairs to roadway and structures commensurate with the current deterioration, while during the summer months the reverse condition prevails because of the necessity of making good not only the wear and tear then taking place but also of overcoming the accumulation of the preceding winter.

If it were practicable to allot definite amounts for maintenance of way for a year with reasonable certainty that this amount would be available, the results of these conditions would not be serious. But this is not possible, at least under present conditions of railway operation. The result is frequently the disorganization of maintenance work at a time when it should be proceeding with the greatest efficiency. This was illustrated by the conditions which prevailed this year. During the winter the traffic was unusually heavy and the wear and tear on the track and structures correspondingly great. Liberal appropriations for maintenance were made and forces were organized on that basis. Early in the spring, however, traffic began to decline and in spite of the deterioration which had already taken place in the property the appropriations which had

been made were reduced in accordance with the traffic then being handled. Now, as the maintenance season is approaching the end, traffic is again increasing and railway managements are showing a greater willingness to spend money. However, as far as repairs to roadway and structures are concerned, relatively little can now be done, for the larger part of the working season has passed.

No condition imposes a greater handicap on the efficient conduct of maintenance of way work and no condition results in a greater waste than the inability of officers of this department to plan their work for a season. To overcome this in part it has been the practice of a number of railroads to distribute the charges for rail and occasionally for a few other major expenditures throughout the year on an arbitrary basis, thereby tending to equalize these charges and stabilize their expenditures. However, it is possible to go even further than this. The Interstate Commerce Commission has authorized the equalization of authorized budgets or estimates for the maintenance of fixed improvements by dividing these estimates into 12 equal parts and charging these amounts to operating expenses monthly, the records for each month to show the adjustment between the actual expenditures on these accounts and the equal monthly proportions of the estimated or authorized maintenance expenses. The result of this practice is to accumulate a credit during the early months of the year when maintenance expenses are at a minimum, which credit is available for expenditure with the current allotments during the summer. At least one large railway has taken advantage of the opportunity to put this arrangement into effect and has found that it has resulted in greatly increased stabilization of its expenditures with a resulting increase in the efficiency of its forces.

This plan offers an opportunity for the elimination of the wide fluctuations which now occur in maintenance of way expenditures with their resulting waste.

Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Graphic Statistics in Management, by William Henry Smith. 360 p. illus., diagrs. Pub. by McGraw-Hill Book Co., New York City. \$4.00.

Railway Accounting Officers' Association. President's Address, 1924, by A. J. County. 11 p. Pub. by Railway Accounting Officers' Association, Washington, D. C.

Railway Accounting Opportunities, by William Sproule. Address at Railway Accounting Officers' Convention, San Francisco, Calif. 10 p. Pub. by Railway Accounting Officers' Association, Washington, D. C.

Railway Returns. Returns of the Capital, Traffic Receipts, and Working Expenditure, etc., of the Railway Companies of Great Britain for the Year 1923. 127 p. Pub. by His Majesty's Stationery Office, London, Eng. £1 1s. 0d.

Periodical Articles

The Canadian Pacific Pavilion, British Empire Exhibition, Wembley, by Charles Rudy. Description of the C.P.R. exhibits. *Canadian Gazette*, August 7, 1924, p. 487-490.

The Channel Tunnel, by Hugh Chesterman. Suggestions as to future developments of this project. *Nineteenth Century*, August, 1924, p. 192-200.

London's Traffic Problem Reconsidered, by Lord Ashfield. Railroads, trams, tubes, and buses in connection with the London Traffic Bill. *Nineteenth Century*, August, 1924, p. 168-181.

Letters to the Editor

Applying the Golden Rule

BROOKFIELD, Mo.

TO THE EDITOR:

I have read the replies of Messrs. Carter and Tafel in the *Railway Age* of Aug. 9, to my criticism of Mr. Bruère's paper, and I consider them both worthy contributions to the cause of co-operation; undoubtedly whatever the opinions of individuals are as to the prize article or my criticism, the fact remains that you have sowed the seed that will bear fruit. In this connection, allow me to quote a concrete example of how the Golden Rule really is in practical operation on the American railroads today. It has been said that a corporation has no soul—it may be true—but the individuals conducting the corporations certainly have souls.

About five years ago a young farmer boy who had been studying nights with the night operator at a certain station made an application for a position as operator. He had studied hard and faithfully and, as a matter of fact had done most of the work for the operator under whom he was studying. He was called into headquarters and given the usual examination and put on the extra board as telegrapher.

This young man, we may call him Mr. Smith, was always ready to go when called upon; he did not always consult the schedule to see if he was getting all that was coming to him; and the net result was that among the hundreds of employees he was noticed as being a man we could depend upon. He soon secured a regular job, got married and in the course of time had a family.

Smith was assigned to the third trick in an interlocking tower. He was not a strong man and we understood from outsiders that he was hardly able to manipulate the many levers properly. However, he made good. After he had been in the tower for six months we received a message that he was sick and unable to work. As is usual, we did not pay any more attention to this, no more than if a brakeman had laid off, so a relief man was dispatched and nothing more was thought about the matter. Three days afterwards we received a message from the terminal superintendent, at another city asking for permission to carry the body of Smith from that city to his home—the request, of course, was granted. Smith left a young widow with three children. She went to another state to live and the relief department of the railroad granted her free transportation and did all they could "within reason" to assist her.

Such cases, of course, come up quite often and as the struggles of those left behind are not always investigated or called to the attention of higher officers, they are soon forgotten—that is human. In this case, however, it happened otherwise. It became known that the young widow was trying to make a living for her three children in a neighboring state. One of the children became very sick and she made a request for a pass to another town to consult a specialist. In making this request it was necessary to explain the circumstances to the pension bureau, which not only immediately furnished the transportation but is now investigating the nature of the sickness of the child and will see that he receives the necessary attention and the widow may receive the help she needs.

This man, this woman and her children had no pension rights; he had not been in the service long enough.

The Empires of Caesar, Nero, Napoleon and the Kaiser crumbled. These men lacked the co-operation of their followers because they used the wrong rule. There is only one that will work: let's try it.

H. P. DREYER.

The Positive Meet

SAN FRANCISCO, Calif.

EDITOR, *Railway Age*:

Referring to letter entitled "The Positive Meet" by one who signs himself "Professor" in July 12 issue of the *Railway Age*:

Why not take a look west of the Alleghenies? Conditions on the New Haven's 1,100 miles of single track, no doubt, are different from conditions on the many miles of single track in the middle western and Pacific states in that most of their single track traffic is commuting or suburban traffic where trains are seldom late, or if so not more than a few minutes, thus making it necessary for the dispatcher, were it not for the "positive meet" to make a number of the full-faced meeting points good by a daily stereotyped train order.

The positive meet is preferable on both electric and steam single-track roads handling principally a passenger traffic. However, it is vastly different on many western single-track lines of long distances where the traffic consists of various classes of not only freight, but passenger trains, with communicating points few and far between; also where we have not the opportunity, in case of circuit failure, of getting into communication with each other over a dozen different telephone routes. Western roads have many classes of freight trains and cannot differentiate between all the classes by various classified schedules. Too many classes of schedules would kill the principal argument in favor of the positive meet, as it would divide the aggregate number of trains otherwise meeting under the system which applies only between opposing trains of the same class.

Today we may have enough green fruit or manifest trains to fill all schedules provided for such movement and tomorrow we may find it necessary to fill a green fruit schedule with less important tonnage. If one ever handled trains under the conditions that exist on the greater proportion of the railroads of the country, no doubt, he would not advocate the general use of the positive meet.

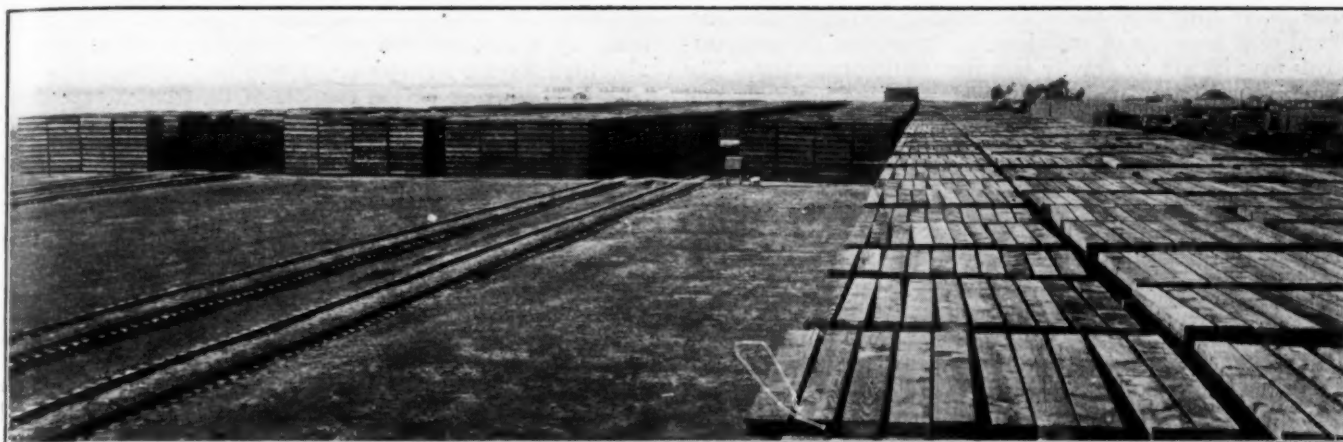
We do not handle our traffic on Western roads by the positive meet order. If we did we would soon have our trains "jammed," for the reason that we do not have communication with every siding making it possible to change meeting points as frequently as becomes necessary, owing to delays in trains of a higher class or those caused by engine trouble—due to bad water in many sections and in some cases to no water, good or bad, for long distances.

The "Professor" states that right by direction is a relic of ancient days, when in fact right by direction does not exist. Right is conferred only by train order and superiority by direction, which no doubt he meant to say, is conferred only by timetable. Superiority by direction is no more a relic of ancient days than is the Morse code, which as yet has not been improved upon.

Before accusing superintendents of being hide-bound and not awakened sufficiently to appreciate his seemingly one thought—the positive meet—he should first thoroughly understand the handling of trains and the conditions with which the superintendents are confronted. It is one thing to criticize and another to do it better yourself.

The inference that the time order is the devil's own handiwork is unjust and I desire to go on record by stating that I do not believe anyone could handle trains on a busy single track dispatching district of 125 miles with four or five helping districts using from 10 to 50 helper locomotives for a period of eight hours without sewing himself up so badly that the hide-bound superintendent would have to relieve him. The one thing most detrimental to discussions relative to rules, dispatching trains and movement of trains under timetable superiority are the persons who participate therein who are out of their class and do not understand the subject under discussion.

WILLIAM NICHOLS.



Douglas Fir Cross and Switch Ties in the Seasoning Yard at National City, Cal.

New Treating Plant Employs Modern Methods

Santa Fe Timber Preserving Installation at National City
Fulfills Needs of Efficient Operation

THE ATCHISON, TOPEKA & SANTA FE is now completing a tie and timber treating plant at National City, Cal., for the treatment of Douglas fir ties and timbers to be used on the Santa Fe coast lines. This plant represents a striking example of present day tendencies in the operating arrangements of such facilities. The retorts are equipped with standard-gage tracks, thus obviating the necessity for any narrow-gage tracks in the plant or yard, while the latter is designed for the most convenient use of locomotive cranes in the handling of the treated and untreated material. All

make the old storage yard serve as the storage and seasoning yard for the timber preserving plant. The relation of the old yard to the new construction is clearly indicated on the map. The storage yard has an area of 75 acres and contains about 10 miles of track arranged as 7 lines of double track, the tracks in each pair being spaced 17 ft. center to center, while the center lines of double track are 105 ft. apart. This arrangement of tracks was thought to be particularly adapted to the handling of material with locomotive cranes and for the operation of portable boring, adzing and sizing machines, the use of which comprises an established feature of Santa Fe timber treating plant practice.

The track layout also includes three loading-out tracks spaced 17 ft. center to center to allow adequate room for the swing of a crane, a grid of four tracks to serve the two retorts and service tracks for the boiler house and the creosote storage tanks. Another important feature is a 40-ft. standard track scale in the tail track over which all material is switched in delivering it to the retort tracks. The yard is provided with water mains and standard fire hydrants connected with the water mains of National City.

The plant is housed in two Truscon steel buildings, a cylinder house 32 ft. by 150 ft., and a boiler house 54 ft. by 60 ft. The retort house contains two treating cylinders 8 ft. in diameter by 124 ft. long, each with a capacity of 1,080, 7-in. by 8-in. by 8-ft. ties. Each cylinder is provided with heating coils consisting of six-inch extra heavy pipe with two-inch standard pipe inside, attached to four manifolds located in pairs one-fourth of the distance from each end of the cylinder. The heating coils are covered by perforated $\frac{3}{8}$ -in. cover plates.

The treating cylinders are constructed of one-inch steel plates with $1\frac{3}{8}$ -in. rivets in all splices and are designed for 250-lb. per sq. in. working pressure. Doors are provided at each end of the cylinders but the track layout provides for one-end operation. These doors are secured in place by 36 three-inch steel bolts, tight joints being obtained by the use of asbestos metallic gaskets. Each cylinder is equipped with two thermometer wells, located one-fourth the length of the cylinders from each end respectively, these wells having openings for mercury thermometers and for the bulbs of recording thermometers. A Rueping cylinder 7 ft. by



A Fireless Locomotive Handles the Trams and Does Much of the Switching of Other Equipment

application of pressures in connection with the conduct of the treating operations is obtained through the use of compressed air storage, no direct pressure pumps being provided.

The plant is located on the shore of San Diego bay within the city limits of National City. The harbor location is of considerable importance because all of the lumber treated is received by water from North Pacific coast ports. Some of it is shipped by boat direct to the plant while a portion of the lumber is purchased from mills in San Diego after having been sawed from logs that had been transported in rafts.

The location of the plant was also particularly favorable because it permitted of the adaptation of an old storage yard to the new purpose, the new construction comprising the building of the plant facilities proper at one end of this yard with such additional trackage as was necessary to

124 ft. is supported above the treating cylinders on structural steel supports of sufficient height so that the preservatives may be run by gravity into the treating cylinders. The Rueping cylinder is also equipped with heating coils and thermometer wells and is designed for a working pressure of 125 lb. It is constructed of 17/32-in. flange steel.

Supplementing the above equipment are two 8-ft. by 14-ft. pressure-measuring tanks and three 5-ft. by 30-ft. high-pressure air receivers. The measuring tanks are designed for 250 lb. per sq. in. working pressure and are mounted in a vertical position on scales with the scale beams located in a convenient position for the operator inside the pump room.

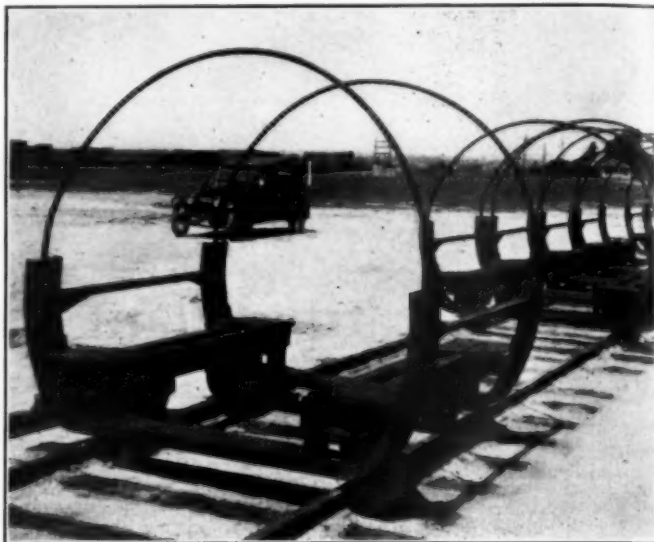
The tanks are also equipped with heating coils and thermometer wells. The air receivers are designed for a pressure of 350 lb. per sq. in. and provide the necessary storage of air for the operation of the Rueping cylinder treatment in lieu of pressure pumps as previously stated. All of the tanks and cylinders were manufactured by the Allis-Chalmers Manufacturing Company of Milwaukee, with the exception of the second treating cylinder and the second pressure measuring tank which were ordered after the original equipment had been installed. These were manufactured by the Manitowoc Shipbuilding Corporation of Manitowoc, Wis.

Air is furnished by one 9-in. by 10-in. by 5-in. by 10-in. Worthington duplex, two-stage, steam-driven compressor, with piston steam valves, built for 350 lb. working pressure, and having a displacement of 245 cu. ft. of free air per min. at 275 r. p. m. A Worthington 8-in. by 18-in. by 9-in. single steam-driven feather valve, rotative vacuum pump is used in connection with an Elliott 1,000-sq. ft. condenser, the latter being mounted on a 3-ft. by 4-ft. by 6-ft. condensate tank. The boiler house contains two 150-hp. return tubular boilers, manufactured by the Frost Manufacturing Company, Galesburg, Ill. The boilers are equipped for burning fuel oil.

The plan of the yards shows the location of four storage

dropped from tank cars and handled from the sump to the tanks by a motor-driven centrifugal pump. This sump is also used for the transfer of creosote or petroleum from one tank to another or for the transfer of oil from storage tanks to working tanks. The working tanks are heated by wrought iron coils in spiral form located in the four-foot mud drums of the tanks.

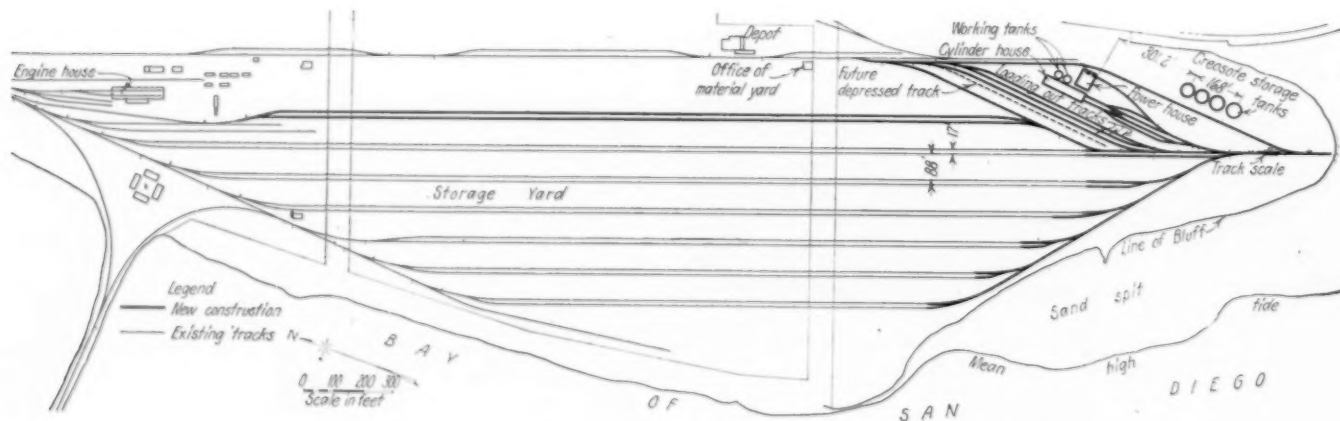
The creosote is received from tank steamers at the wharf of the Charles R. McCormick Lumber Company, San Diego,



Standard Gage Trams Built for the National City Plant

and is pumped through a six-inch pipe line a distance of approximately 22,000 ft. Pumps on the ships furnish sufficient pressure to drive the creosote this distance and no boosters pumps are needed.

One of the photographs shows the standard-gage trams.



Map of the New Treating Plant and Storage Yard at National City, Cal.

tanks and two conical bottom working tanks. Two of the storage tanks are 48 ft. in diameter by 30 ft. high, with a capacity of approximately 400,000 gal. each while the other two are 40 ft. in diameter by approximately 30 ft. high, with a capacity of 260,000 gal. each. The working tanks are of 50,000 gal. capacity each and are located near the retort building on structural steel supports of sufficient height so that the preservatives will run by gravity to the Rueping cylinder and the pressure measuring tanks.

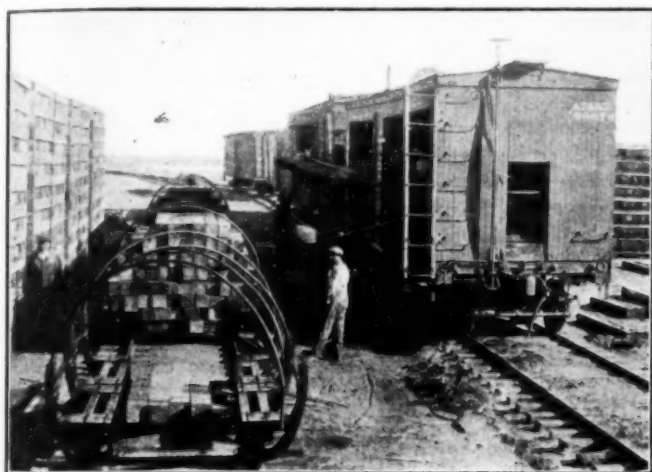
The storage tanks are provided with heating coils made of three-inch threaded cast iron pipes and are served by a concrete sump six feet in depth, in which the oil can be

provided for this plant, of which 65 have been built in the shops of the Santa Fe at the Somerville, Tex., treating plant, according to designs provided by the engineer of car construction of the Santa Fe at Chicago in co-operation with the treating plant department. The trams are moved about the plant by a 40-ton Porter steam storage locomotive which is charged with steam at intervals at the boiler plant. This locomotive is charged to a pressure of 150 lb. per sq. in. and has a steam consumption of approximately 50 lb. of steam per hour. In addition to handling the trams this fireless locomotive is also used to spot cars. However, the operation of the plant entails in addition the regular switching serv-

ice of a yard engine and crew for a period of one to two hours per day.

How the Plant Is Operated

In accordance with the long established policy of the Santa Fe's timber treating department, the operation of this plant is committed to the thorough air seasoning of the



Ties are Adzed and Bored and Loaded in the Trams in One Handling

timber before treatment, the climatic conditions at San Diego being almost ideal for this purpose. One of the photographs shows a large quantity of ties undergoing the seasoning process in the storage yard and is particularly noteworthy in illustrating the unusual neatness and regularity of the piling. The uniform alinement is primarily the result of careful location of the foundation ties plus the exercise of consid-

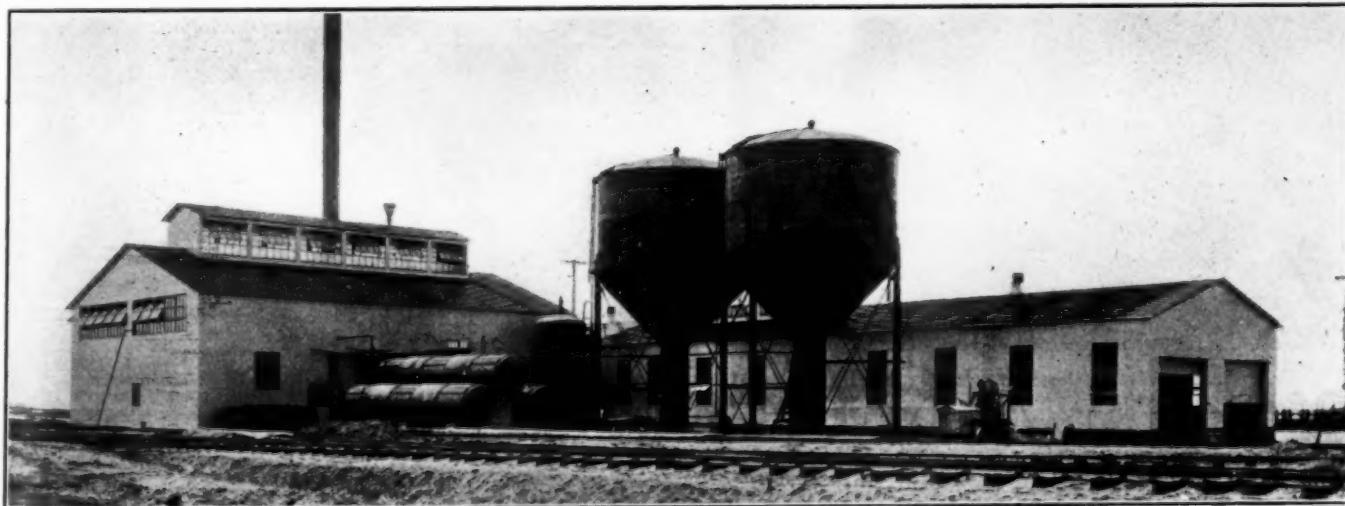
This plan saves an extra handling of the ties in treatment.

Ties and switch ties are treated by the Rueping process with eight pounds of preservative per cubic foot of timber, the preservative being a mixture of 45 per cent of coal tar creosote and 55 per cent of petroleum residuum. Bridge timbers receive a full cell treatment of 14 lb. per cu. ft. of creosote and piling 16 lb. per cu. ft. of creosote.

As stated above, the preservative pressure is supplied by air drawn from air receivers, which are filled to a pressure of 350 lb. per sq. ft. This pressure is applied to the preservatives and pressure measuring tank which, connected to the treating cylinder, apply pressure to the timber in any amount and speed desired. Also, any air used for application to the timber direct in the Rueping process is drawn from the air receivers as needed. The storage of air and its use in this manner is not only convenient but economical in the use of steam inasmuch as a relatively small compressor can be used by operating it the greater parts of the 24 hours.

This compressor also supplies exhaust steam for the heating coils in a comparatively steady flow, all of which is used with great economy. Frequent weighing of the preservatives in the pressure measuring tank during the treatment of a charge of timber insures accurate information as to gross absorption, kick-back, recovery during final vacuum and net retention of preservative. All cylinders and working tanks are equipped with indicating and recording pressure gages and thermometers the dials of which are located in the pump room convenient to the header valves by which the treatment is controlled. Foxboro instruments are used.

Contemplated plans for this plant include the installation of a large planer stationary cutoff and rip saws, together with buildings and power necessary to their operation. The object of this machinery is to size the stringers, caps and bridge ties accurately after they have been seasoned, thus eliminating the uneven shrinkage encountered where large



The Plant—Boiler House at the Left, Cylinder House at the Right. The Three Air Receivers, Two Elevated Working Tanks and a Vertical Pressure Measuring Tank Are Also to Be Seen

erable care in seeing that each layer is carefully placed. This plan fosters cleanliness in the yards and has been responsible for freedom from unsatisfactory conditions which lead to decay in the storage piles. This plant is operated in strict adherence to the Santa Fe's policy of adzing and boring ties before treatment, which is handled by a portable boring, adzing and perforating machine which is moved about as its work is done. As seen in one of the photographs, the portable plant is set alongside the storage piles and as rapidly as the work is done on the ties they are loaded on the trams for delivery direct to the cylinders.

timbers are purchased, sized and then seasoned. The cut-off saw will be utilized to cut 28-ft. stringers to exact length while this saw, together with the rip saw, will be used also for the reclamation of second-hand timbers sent to the plant from the Santa Fe lines.

The plant was designed and constructed under the direction of R. S. Belcher, manager treating plants, Atchison, Topeka & Santa Fe system, Topeka, Kan., Grant B. Shipley, having been retained as consulting engineer. Ed Kelly was engineer in charge during construction. The plant is being operated by D. L. Murray, superintendent.

Cinder Handling Cost Halved

THE ECONOMY of modern cinder handling equipment as compared with earlier methods of disposal is shown in a striking manner by a study of a Roberts & Schaefer N. & W. electric type installation which has just been made by the A. C. Nielsen Company, an independent engineering organization of Chicago, in co-operation with the railway on whose line the plant is located. This railroad does a freight business exclusively, and serves as a connecting road for several other lines. Years ago the ashes from the locomotives were removed in wheelbarrows, this expensive process being later replaced by a locomotive crane, which took the ashes from a pit beneath the track. While the crane effected a considerable saving, it was felt that the cost could be still further reduced. Satisfactory experience with two Roberts & Schaefer coal handling plants led to an investigation of the N. & W. type electric cinder plant made by the same company. This investigation indicated a large possible saving over the crane method.



Plant from Which the Records Were Obtained

The cinder plant was installed in the summer of 1923. It handles the ashes from 24 locomotives regularly, and does considerable work for other engines as well. As the fire is cleaned, the ashes are dumped into a hopper beneath the track, and from there they drop into a skip car having a capacity of 80 cu. ft. This car is hoisted on an inclined track by means of a 15-hp. electric motor, and discharges into a standard railway car on an adjacent track.

During the eight months that this plant has been in service, repairs have amounted to \$58.95, a large part of which was for electrical alterations not strictly chargeable to this account. The plant is expected to last 20 years and charges for depreciation are on that basis. Adding interest at six per cent, and including an allowance of \$100 per year for repairs and maintenance, which allows for an increase with age, the total annual fixed cost is \$819.53. Prorated for eight months, this amounts to \$546.35.

Power for the same period cost \$158.12, or about \$0.0443

per ton of ashes handled. Supervision cost \$260.76 and labor amounted to \$1,042.80, which is about equal to 10 hours a day for one man. The plant is in use during three shifts daily, but it does not occupy the full time of a man. The total cost for the period of eight months was \$2,008.03, which for the 3,570 tons handled, amounts to \$0.562 a ton of cinders. This cost will be decreased when the plant is given more work. To date, it has handled only about 18 tons of cinders a day, and since it can handle 100 tons, it has been operating at only about 18 per cent of full capacity. On some days, however, 50 locomotives have been cleaned, which means about 63 tons of ashes or 63 per cent of the capacity. The capacity of the plant is not limited by the size and speed of the skip, but by the time required to clean the locomotive fires, between 12 and 15 minutes being required for each locomotive. As shown on the accompanying cost sheet, the cost when operating at full capacity will be \$0.197 a ton.

The cinder plant has effected an appreciable saving compared with the locomotive crane. When the crane was abandoned the cost was averaging \$1.16 a ton. Since the new plant does the work at a cost of only \$0.562 a ton, the net saving is \$0.598 a ton, which amounted to \$2,134.86 for the eight months' period. This is equivalent to \$3,202.29 a year, which is a net annual return of 36 per cent on the investment. In other words, the cinder plant will repay its cost in less than three years and as the amount of work increases, the savings will be even larger.

The hand method cost about \$2 a ton in comparison with which the cost is reduced to \$1.438 a ton, or \$7,700.49 annually. This will pay for the plant in less than 14 months.

SUMMARY OF COSTS AND SAVINGS

Cost of operating electric cinder plant:	
Depreciation—\$8,828.56 (20 years' life).....	\$441.43
21 $\frac{\$8,828.56 \times .06}{20}$	278.10
*Average interest at 6 per cent.....	100.00
Allowance for repairs and maintenance.....	\$819.53
Fixed cost per year.....	
Fixed cost for 8 months—\$819.53 $\times \frac{8}{12}$	\$546.35
Power	158.12
Direct labor	1,042.80
Supervision	260.76
Total cost for 8 months.....	\$2,008.03
Tons handled	3,570
Cost per ton $\frac{\$2,008.03}{3,570}$	\$0.562
Operating cost at full capacity:	
Fixed cost per year, present basis.....	\$819.43
Additional repair allowance	200.00
Fixed cost per year, at maximum capacity.....	\$1,019.43
Fixed cost per day, \$1,019.43 (300 days).....	\$3.40
Power, 100 tons at \$.0443 per ton (present cost).....	4.43
Labor, 24 hours, at \$.44.....	10.56
Supervision	1.30
Cost per day.....	\$19.69
Cost per ton $\frac{\$19.69}{100}$	\$0.197
Savings of electric cinder plant over locomotive crane:	
Cost per ton, locomotive crane.....	\$1.160
Cost per ton, cinder plant.....	.562
Net saving per ton.....	\$.598
Net saving for 8 months, \$.598 \times 3,570 tons.....	2,134.86
Corresponding net saving per year, $2,134.86 \times \frac{12}{8}$	3,202.29
Net annual return on investment.....	36%
The electric cinder plant pays for itself in less than 3 years.	
Savings of electric cinder plant over hand method:	
Cost per ton, hand method.....	\$2.000
Cost per ton, cinder plant.....	.562
Net saving per ton.....	\$1.438
Net saving for 8 months, \$1.438 \times 3,570 tons.....	\$5,133.66
Corresponding net saving per year, $\$5,133.66 \times \frac{12}{8}$	7,700.49
The cinder plant pays for itself in less than 14 months.	

*Allowing for interest earned by depreciation reserve.

Cost Accounting in the Mechanical Department

Cost Knowledge and Proper Analysis of Data Will Assist Production Control and Develop Economies

By George W. Armstrong

Special Representative, Mechanical Department, Erie Railroad

ONE OF THE prime functions of cost accounting is to enable the officer in immediate charge of a plant or department to know currently the details of what is going on in his jurisdiction. Railway accounting is prescribed by the Interstate Commerce Commission classifications. The uniform classification of operating expenses serves a certain purpose; cost accounting is concerned with

plies purchased and given out; that it charge labor to the work on which it is employed; that it furnish an accurate check and distribution of overhead expense or burden; that it record facts and conditions and provide for current interpretation of their significance.

Responsibility for Cost Accounting

Cost accounting to be of the most value in accomplishing the purposes of production control should be a part of the general scheme of a production organization. It should not be accounting merely, but interpretation of accounts; it should be the indicator of individual effort and output. Effective production when and as wanted is secured by a well-devised scheduling and routing system. The aid and effective use of cost accounting to control and stimulate production should insure that schedules are met and a full return is obtained for every dollar expended.

The full benefit of a cost accounting system depends on a liberal and sympathetic attitude on the part of the accounting department as to its application and operation. Presumably the basic distribution should be made by the mechanical department as an integral part of its production organization, thus following the plan most effective in the industrial world. The payroll and material disbursements in total become the controlling accounts by means of which the accounting department looks to the cost accounting department for full detailed explanation. Naturally the records of the cost accounting department are and must be subject to periodical audit and check on the part of the accounting department as far as the latter's interests are involved.

Cost accounting as related to maintenance of equipment divides sharply into three branches:

First—Accounting for the cost of general repairs to equipment units.

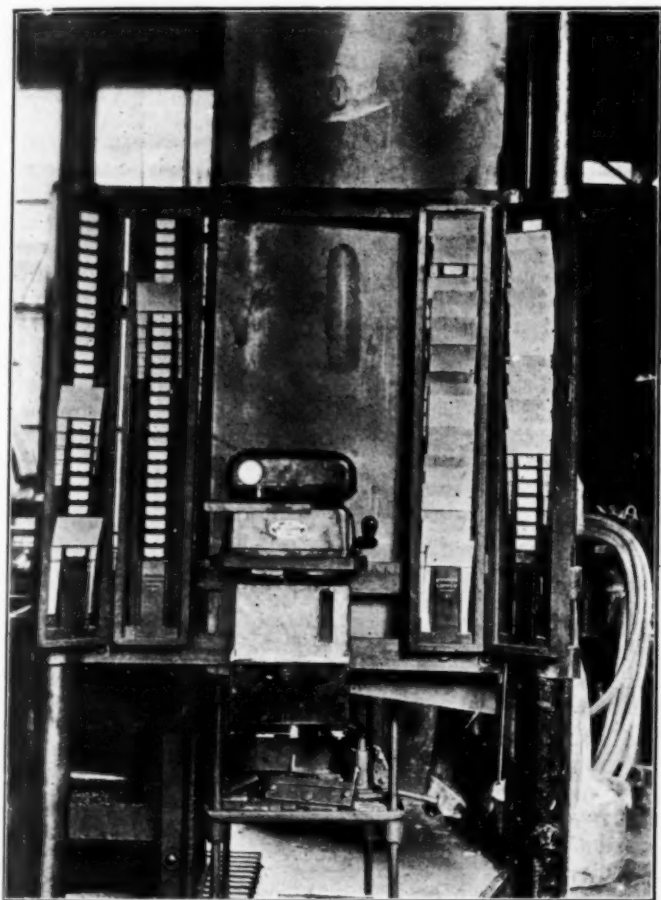
Second—Accounting for cost of finishing parts for equipment repairs prior to shopping of the equipment unit or in quantity for storehouse stock.

Third—Accounting for maintenance repairs in conjunction with operation; i. e., enginehouse and cripple track repairs.

General Locomotive Repair Shops

The requirements for cost accounting in a locomotive repair shop are a sub-divided classification of expenditures to the locomotive undergoing repairs and a shop order system to care for finishing parts in quantity or in advance of the need and of such unusual expenditures as initial superheater application, valve gear, etc.

What is cost accounting to accomplish in connection with general repairs to the locomotive? Is it to secure a record of the exact cost of each shop operation or to furnish an aid to production and a means of determining whether an adequate return is secured for value expended? Obtaining a complete distribution of the time consumed by each workman on each operation will not solve the cost problem, but will result, the more complete and elaborate such distribution is, in getting further from the desired end. The only effect will be a tremendous volume of detailed information practically impossible of digestion. Grouped charges for individual locomotives backed by complete details entering into these group totals will, however, supply the means for analyzing



Arrangement of Time Cards and Clock Which Are Used for the Proper Distribution of Labor Charges

the more minute details of the primary accounts of the operating expense classification. Even with cost accounting more is required than the mere records of cost. The records by themselves cannot effect economy. It is only by their proper presentation in convenient and convincing form to the executive responsible and by their proper analysis that he is put in a position to correct the inefficiencies revealed by these records, through improvements in organization, administration and in individual processes and methods. The degree of refinement in a cost accounting system should not exceed that required to secure this result; i. e., effective control. The essentials of any cost keeping system are that it accurately account for materials and sup-

cost differences, between shops, the individual engines in a class, the differently designed details of various classes of engines and the classes as a whole.

Indicator for Constructive Analysis

For constructive analysis in directing operation, in controlling and determining policies based on cost accounting facts and in finding whether a proper equivalent is secured for money expended, labor and material should be charged to master classifications of work and by locomotive number. A standard key, using a mnemonic reference; *i.e.*, one by its letter combinations suggesting the thing for which it stands, would be of greatest assistance. A suggested classification of the repair work done on a locomotive follows:

AB	Air brake work	PA	Painting
AP	Ash pans	PG	Power reverse gear
BA	Brick arch	PI	Pipe and jacket work
BL	Boiler	PN	Pistons, piston rods and cross-heads
BR	Brake rigging	RD	Rods
CB	Cabs	SP	Steam pipes
CF	Cab fittings	SR	Spring rigging
CG	Cylinders and guides	ST	Stoker
DB	Driving boxes	SU	Superheater
DG	Draft gear	TF	Tender frame
EH	Electric headlight	TK	Tank
ET	Engine trucks	TT	Trailer trucks
FB	Fire box	TET	Tender trucks
FE	Front end	WH	Wheels
FL	Flues	VE	Valves
FR	Frames	VG	Valve gear
GR	Grates		

Provision should be made for checking labor distribution directly in the department and without requiring the foreman or workman to perform any clerical labor in its allocation. The foundation of the value of cost accounting depends upon the accuracy of its elements and this demands proper allocation of charges. Material orders should be issued by one or more men delegated primarily for that duty, thus insuring proper distribution as well as a check on the disbursement of material.

Shop Overhead Accounting

Overhead should be accounted for and distributed as far as possible by departments, a separate shop expense account being kept for each department. Effective control is insured by definitely fixing these indirect expenses along departmental lines, establishing individual responsibility and giving the department executive a means of telling whether his costs are high or low. It also serves to reflect a truer cost on parts manufactured on shop order in quantity or otherwise, with a heavy indirect departmental labor charge and possibly a low direct labor cost.

General expense of the shop, such as supervision, etc., impossible to allocate by departments, should be pro-rated, first on the basis of the total labor payroll chargeable to Account 308—Maintenance of Equipment, Repairs to Steam Locomotives—as distinct from labor payroll chargeable to shop orders. To reflect the condition in relation to each locomotive undergoing repairs and to serve as a just charge against a locomotive held unduly, the account 308 proportion of this general expense should be allocated on the basis of the erecting shop hours the locomotives have spent.

The aim of overhead accounting should be to reflect accurately the conditions so likely to be overlooked and which so insidiously sap the earnings by increasing maintenance of equipment expenses. The component parts of overhead as commonly taken up at the local point are all within the control of the local management.

When for any purpose it becomes necessary to ascertain the real competitive costs of effecting repairs or making locomotive and car parts in quantities, it is only a comparatively simple task to reconstruct the accounts for application of an additional percentage to take up the following items carried in general accounts. These items are not necessary for regular consideration in effecting the desired end of production control through cost knowledge. These overhead expenses are:

Pay of shop superintendent or master mechanic, account 301.
Wages of shop clerks to shop superintendent or master mechanic and expenses of shop superintendent or master mechanic, account 301.
Cost of labor and material for repairs to shop machinery, account 302.
Cost of repairing power plant machinery and apparatus, account 304.
Stationery and printing, account 334.
Injuries to persons, account 332.
Repairs to shops and enginehouses, account 235.
Repairs to power plant buildings.
Insurance, taxes, interest on valuation, depreciation, proportion of general expenses.

Shop Order System

The cost accounting plan should be supplemented by a shop order system. Shop orders should be used for all materials manufactured in quantities, prepared in advance of the shopping of the equipment unit, or finished for outside shops, and for the purpose of allocating expense for certain improvements chargeable to capital account or for other purposes where it is necessary to segregate the charge definitely. Such shop orders should be keyed to denote the month of issue. The month might well be denoted by the ten-thousand group in which the number occurs; thus, 10,067 would be a shop order issued in January; 30,152, a March shop order, and so on. Shop orders, as issued should not only designate clearly and definitely what is to be accomplished (no blanket orders allowed) but also the departments upon which they are issued. The cost accounting bureau should be furnished by the stores department with a copy and no charges should be accepted from any department not listed on the shop order without further authorization.

To permit the following of work and the recording of progress, a shop order credit slip should be required from the receiving department or storehouse for each transfer and turned in by the originating or sending department to the shop order clerk.

Enginehouse Operation

Proper determination of running repair costs is virtually impossible under a system of workman time allocation. A workman is not a bookkeeper and the inevitable tendency is to charge the time distribution to the locomotives in sight at the time of making out such distribution or to take the first things coming to mind, whether they represent locomotives worked on that day or out on the road in service.

A cost system for an enginehouse to secure effective control does not necessitate the degree of refinement demanded for general repairs. Sufficient detail to judge the efficiency of the terminal itself, to afford some basis for comparison between terminals and serve for analysis and equating of facilities, and further to permit of comparative costs as between classes of engines will suffice. Cost statistics of such nature will then permit of analysis as to the comparative maintenance costs of different designs of equipment, between different specialties and appliances and in many ways be productive of benefit in shaping policies for improved operating economies.

The foregoing essentials can be accomplished by, as far as possible, allocating direct labor by classes of locomotives and to a more condensed work classification than that employed in the shop, although using the same symbols. The prefix *R* should be added to denote roundhouse. A suggested classification follows:

SERVICE TO EQUIPMENT

RAB	Air brake work	KRD	Rods
RBL	Boiler	RSR	Spring rigging
RBA	Brick arches	RSU	Superheater
RCG	Cylinders	RST	Stoker
RCF	Cab work	RTK	Tender
RFE	Front ends	RVE	Valves
RFL	Flues	RVG	Valve gears
RFR	Frames	RWH	Wheels

HANDLING LOCOMOTIVES

AH	Loading or shoveling ashes	HS	Hostling
BF	Flues cleaned	IN	Inspection
BP	Packing boxes	PF	Preparing fires
BW	Boiler washing	TE	Turning engines
CO	Coaling	TI	Supplying engines with oil and waste and tool inspection
DP	Dispatching	WE	Wiping engines
FC	Fire cleaning		

Car Repairs

The same general scheme described for locomotive repair work would be applicable to the car department. The same essential need for a cost accounting system exists in this department as in the other. The classification of work charges for passenger and freight cars should be in equal detail to that suggested for work on locomotives. There will be certain essential differences, however. One refers to the

Charge <u>So 5124</u>		A.B.C. RAILROAD COMPANY		5-12-1924	
Employee's Check No.	Name	Occupation	Rate		
636	<u>Le Hitchcock</u>	MACHINIST	56		
JAN. 11 11 9		STOP	Operation <u>Beading tools</u>		
JAN. 11 7 9	40	START			
JAN. 11 16 9		STOP	Labor Charge <u>448</u>	<u>unfinished</u>	
JAN. 11 13 0	40	START	Dep't Overhead	Mach. No.	

Machinist's Daily Time Card Showing Labor Charge Credited to a Shop Order

charges for general repairs to cars as distinguished from light repairs; general repairs will be allocated in bulk only to the work classification. Another applying in the case of freight cars will be the necessity for distribution as between home and foreign cars.

A suggested classification follows:

FREIGHT CAR CLASSIFICATION		PASSENGER CAR CLASSIFICATION	
TK	Trucks	PTK	Trucks
DG	Draft gear	FDG	Draft gear
UF	Underframe	PUF	Underframe
BK	Brakes	PBK	Brakes
HCS	House car superstructure	ST	Superstructure
OTS	Open top car superstructure	SE	Seats
RG	Roofing	PF	Platforms
PA	Painting	PPA	Painting
		PRG	Roofing

While the foregoing method will serve many useful purposes in analyzing where costs of car repairs go, as between different important subdivisions of the car and in certain classes of cars as far as general repairs are concerned, it does not fill all requirements for analyzing freight car costs. Freight cars spend a large portion of their service life on other railroads than the owning one. Analysis of A. R. A. bills will of course give the balance of the story. But here again we are confronted with our old bugbear of the impossibility of digesting a mass of details, and the different basis upon which foreign and home costs are necessarily determined. Consequently a suggestion outlined recently deserves careful consideration. This is in brief to designate say 50 in a series of 1,000 cars as a "dummy" private line, and have all repairs to them, home or foreign, billed in accordance with the A. R. A. billing practice. These cars would be treated on the owning road as foreign cars, as far as charging for repairs are concerned, but with the understanding that in extent of repairs they are to be treated as home cars. Then by employing the group classifications outlined above as well as the car series totals, thorough analysis will show many things with respect to comparative designs of similar car details as well as relative merits of different car designs.

Method of Labor Distribution

A job time card should be utilized for purposes of securing labor distribution. These job cards should preferably

be issued by men especially designated for that purpose located at proper and convenient points throughout the shop. These men become in effect assistant foremen, relieving the foreman of all clerical work and giving the foreman more time to supervise the workmen. These cost timekeepers should consequently be practical men and should be viewed as eligible material for future foremen.

A thorough scheduling system should go hand in hand with a cost accounting system. The cost timekeeper, co-operating with the foreman, should prepare job tickets for each workman. The use of such tickets and their preparation in advance will eliminate delays and also insure meeting the schedule. These job tickets should be placed in the rack by the cost timekeeper and they will there be picked up by the workman ready to proceed with the work. The time of starting and stopping jobs would be marked on the job ticket either by means of an electrically controlled cost recorder or by the foreman or cost timekeeper.

A job time card should be made out for each job worked upon, or for each day's work. By job is meant the unit for which charge is to be found—such, for example, as fitting up a set of side rods for a certain locomotive, applying a firebox, or making 1,000 set screws on a shop order. Operations like sensitive drilling, threading miscellaneous bolts or other work obviously of small time increment applicable to any specific charge should be treated as departmental overhead.

Where jobs are originated in departments other than those in which they are to be performed, a job card should be made out by the foreman ordering the work, filled out with the proper charge and instructions as to the operation to be performed and forwarded with the work as authority and instruction for performance.

Operation description on the job time card should be brief, but in sufficient detail to define the work. Where a job is not finished within one day's period, an unfinished job card should be turned in for each day's work.

With the installation of a cost accounting system a time clock system, if not already in use, should be used for checking workmen in and out. The weekly or bi-weekly time

Charge <u>1728 FB</u>		A.B.C. RAILROAD COMPANY		5-14-1924	
Employee's Check No.	Name	Occupation	Rate		
526	<u>John Smith</u>	<u>Boiler maker</u>	<u>.72</u>		
551	<u>Wm Jones</u>	"	<u>.72</u>		
573	<u>R. Brown</u>	" <u>Helper</u>	<u>.45</u>		
582	<u>E. White</u>	"	<u>.45</u>		
JAN. 11 11 9		STOP	Operation <u>Applying Fire box</u>	<u>234</u>	
JAN. 11 8 0	40	START	<u>driving stay bolts</u>		
JAN. 11 16 9		STOP	Labor Charge <u>16.72</u>	<u>unfinished</u>	
JAN. 11 13 0	40	START	Dep't Overhead	Mach. No.	

Time Card Showing Distribution of Labor Charged to a Fire Box

clock card, then becomes the instrument for determining payroll earnings, while the job time cards become the distribution of these payroll earnings.

Material Orders

All materials, except nuts, washers, cotter pins, grate pins, split keys and similar materials uniformly used in the car shop, should be ordered on proper material orders. The excepted articles should be carried as a working stock in the department and charged out in the overhead expense of that department. Material orders should be made out by the foreman or cost timekeeper and identified by proper locomotive number and group number, shop order or overhead designation. Each order should be confined to material of one store department class and one charge. Material orders

after being priced and extended by the store department will be turned over to the cost accounting bureau for distribution.

Overhead Accounting

Overhead will be divided into two classes as far as shop operation is concerned—departmental and general. These two classifications are as they indicate, those which can be allocated or assigned to a respective department, and those assigned to the shop as a whole.

SHOP EXPENSE

GENERAL

Shop watchmen	Employment clerk
Small tools	Distribution clerks
Shop tool attendants	Report clerk
Shop switch engine crew	Portion wages messenger in shop
Handling ashes power plant	superintendent's office
Stationary firemen and engineer	Shop order clerk
Unloading coal at the power plant	Shop messenger
Shop crane operator	Yard laborers
Shop janitor	General foreman
Cleaning scot	Power } Until basis established
Cleaning shop yard	Heating } for departmental disci-
Whitewashing	Lighting } bution.
Time clock system	Traveling expenses
Belt repairman	Removal snow and ice
Check clerk	

DEPARTMENTAL

Lye house, labor and material	Washing windows
Small tools	Cleaning shop pits
Cleaning shop	Checking in and out
Building fires in blacksmith shop	Depa..mental laborers
R. H. tool room attendant	Departmental foremen
Oiling machinery	Fuel for forges
Departmental crane operators	Working stock material
Cleaning machinery	

The Interstate Commerce Commission classification of operating expenses requires that overhead represented by shop expense shall be distributed in the relative proportion that the total amount of charges to shop expenses bears to the total of the directly distributed labor. Owing to the fact that power, portion of interest, depreciation and repairs to building, etc., applicable, let us say, to a large slab milling machine or planer are manifestly greater than that for a 16-in. engine lathe or drill press, this is obviously not a wholly equitable method of distribution. The effect of this requirement can, however, be to a certain extent offset, inasmuch as it is applicable for primary account distribution and not essentially concerned with the detailed items entering into the primary accounts. Thus the distribution of overhead in a manufacturing department, after its proportion of the whole is determined, can be made on a floor space proportion basis or on any other which would reflect the difference in operating cost of an engine lathe, automatic machine or large turret lathe.

Following in the main, however, the I. C. C. requirement, departmental overheads should be distributed on the basis of the job labor cost to the total labor charges. General overhead expenses should be distributed on basis of the proportion of erecting shop days during the month to the total erecting shop days.

Cost Distribution

Each day the job time cards for the preceding day will be figured for elapsed time, extended and checked to see whether they are complete for each department and agree in total hours with those shown on the in-and-out cards.

After completing extension and check, they will be sorted by job charges and by means of a listing adding machine, the job costs will be figured and the balance struck. This is done on a sheet, 8½ in. x 10 in., arranging the figures in columns and leaving a suitable binding margin on the left hand edge. Between each column will be left space for recording each group charge, shop order charge, etc., when checking. The daily sheets obtained thus become a record of the distributed charges and furnish a quick means of ascertaining cumulative charges to any job. Material charges after they are received from the storekeeper will be distributed by jobs and groups in the same manner as labor charges.

Where the volume of work is sufficient to warrant, the punch card system should be employed and electric sorting and tabulating machines utilized to make the necessary distribution and balance.

Cost of Cost Accounting

One of the uppermost thoughts in the executive's mind is "What will cost accounting, or production control, cost?" One answer is, no more than piecework directly, but far less indirectly. A more concrete and comprehensive estimate, however, is given in the following tables:

LOCOMOTIVE SHOP

	No. of workmen	No. of cost men
Blacksmith shop	38	1
Boiler shop	95	2
Carpenter and tank	21	1
Tin, pipe and copper, electrician and paint	38	1
Machine, fitting and erecting shop	229	4
Miscellaneous mechanics	25	..
Laborers	64	..
	510	9

9 cost booth men at \$175 per month	\$1,575
3 distribution clerks at \$110 per month	330
1 cost accountant	250

Average monthly payroll

Average monthly material charges

Percentage of cost control on monthly charges

CAR SHOP

	Foremen	Mechanics	Helpers	Laborers	Total	Cost men
Passenger department	3	25	5	4	47	1
Paint	2	20	9	..	31	1
Pipe and tin	1	10	..	..	11	1
Upholstery	1	5	1	1	8	1
Planing mill	1	6	1	2	10	1
Machine	1	10	5	1	17	1
Blacksmith	1	16	16	1	34	1
Freight repairs	5	70	4	2	81	2
Steel car repairs	2	54	4	3	63	2

Miscellaneous force:

	Foremen	No. of Men	Total
Laborers	1	24	25
Storeroom .....	..	27	27
Scrap yard	2	29	31
Watchmen .....	..	3	3
Firemen .....	..	2	2
Engineer .....	..	1	1

Total cost force:

9 cost booth men at \$175 per month	\$1,575
3 material men, checking material after application to car prior to painting at \$175 per month	525
3 distribution clerks at \$110 per month	330
1 cost accountant at \$250 per month	250

Average monthly material charge

Average monthly payroll

Percentage of cost control on monthly charges

Freight Car Repairs

Assign 1,000 cars to represent 20,000 cars. Assume charges upon A. R. A. bills to average one Hollerith card per day. This requires punching, tabulating and analyzing 1,000 cards per day.

1 Analyst at \$4,000 per year	\$4,000
1 Hollerith punch operator	1,200
Rent of sorting and tabulating machines	1,200
	\$6,400

Assume the average cost of repairs per car per day as \$160. The amount represented by cost of repairs to freight cars for 20,000 is \$3,200,000 and the cost control cost as a percentage of the repair costs, amounts to 0.2.

What Cost Accounting Accomplishes

The results to be obtained from cost accounting will depend on the spirit in which it is undertaken and the co-operation secured from the employees. The degree of employee co-operation will depend on how effectively it is sold to them. The amount of saving will, of course, be governed by the actual condition existing in a shop prior to the undertaking of the cost accounting work. Unquestionably, in any shop

the plan should afford a more uniform production and point out many otherwise overlooked and undiscovered leaks and possibilities for improvement. A few examples will possibly serve to illustrate.

The cost of cylinder packing rings were observed in one shop to take a sudden jump. Investigation following the cost accounting indications showed the increase largely due to a change in practice whereby five rings were cut off at one time instead of four. This resulted in getting 15 rings in three cuts in place of 16 per casting as secured with four cuts. For a total material cost of \$359.10, 135 rings instead of a possible 144 were secured, or a cost of \$2.66 per ring instead of \$2.49. The actual labor cost per ring—cutting five rings at a time—was 23.3 cents. The direct labor cost represented only 8.8 per cent of the direct material cost. Disregarding shop and store expense, labor cost could be increased 73 per cent without entailing any greater increase than the reduction in the number of rings per casting caused in material costs. Two alternatives were presented, either restoring the former practice or modifying the casting to be cut up into 15 rings with a minimum of waste. Had this been undiscovered it could have continued to be a constant leak.

Another road discovered after the installation of a cost accounting system, that the painting costs for freight cars seemed high. An analysis of the situation disclosed that owing to the use of small capacity containers for the spray painting, too frequent trips were required to the paint shop for replenishing the supply. With the installation of large capacity tanks, wheeled to the painting zone, a marked reduction in painting expense was effected.

Another road's interesting application of cost accounting, as a production control device, has been the checking of daily output with experience performance tables that had been developed. By means of these experience tables the individual efficiency or department efficiency can be rapidly ascertained. It has been found that this gives a very effective control over uniformity of output, permits of quickly locating the erratic worker and also checks cases where production time is unduly increased because of the non-use, due to lack of repair or to ignorance of their existence by new workmen of fixtures, tools, etc., made for efficient production.

Conclusion

An insurance premium of two per cent for cost accounting or production control will add about one-half of one per cent to the present ratio of maintenance and equipment expenses to total operating expenses. But cost knowledge and production control which can come through such cost accounting and cost analysis should be one of the most important agencies in constructively aiding to bring about an improvement and substantial reduction in these railroad operating costs. An awakened cost consciousness on the part of the management is the one great hope for bettered operation. The awakening will lead straight and inevitably to improved facilities, organization and equipment.

OF 5,460 LOCOMOTIVES inspected by the Bureau of Locomotive Inspection during July, 2,553 or 46.8 per cent were found defective and 282 were ordered out of service, according to the Interstate Commerce Commission's monthly report to the President on the condition of equipment. During the first six months of 1924, of 34,174 locomotives inspected, 17,482 or 51 per cent were found defective and 2,842 were ordered out of service. Of 95,047 freight cars inspected by the Bureau of Safety during July, 3,692 or 3.9 per cent were found defective and of 2,162 passenger cars 25 were found defective. During the month 40 cases, involving 123 violations of the safety appliance acts, were transmitted to various United States attorneys for prosecution.

Freight Car Loading

WASHINGTON, D. C.

REVENUE FREIGHT CAR LOADING for the week ended August 16 was greater than that for any previous week this year, showing an increase of over 10,000 cars as compared with the week before. The total was 952,888 cars, which was 87,050 less than the total for the corresponding week of last year but an increase of 106,622 cars as compared with 1922. Increases as compared with the corresponding week of last year were reported in the loading of grain and grain products and merchandise and in the Poca-hontas, Southern, Central Western and Southwestern districts, while the loading of coke and ore was less than it was in 1922. Coal and ore loading was less than that of the preceding week. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING

Week Ended August 16, 1924

Districts	1924	1923	1922
Eastern	217,756	248,467	196,778
Allegheny	187,085	224,077	177,416
Pocahontas	43,970	42,434	30,199
Southern	135,320	131,326	107,666
Northwestern	144,122	175,967	150,074
Central Western	155,386	150,890	133,351
Southwestern	69,249	66,777	50,782
Total Western districts.....	368,757	393,634	334,207
Commodities			
Grain and grain products.....	60,195	52,498	55,504
Livestock	30,433	32,551	29,674
Coal	144,549	189,179	81,451
Coke	6,915	13,587	8,182
Forest products	69,281	77,314	57,441
Ore	50,178	80,758	67,535
Merchandise, l. c. l.	242,050	241,288	229,187
Miscellaneous	349,287	352,763	317,292
Total	952,888	1,039,938	846,266
August 9	942,198	973,750	842,690
August 2	945,731	1,033,466	842,663
July 26	925,859	1,041,415	848,858
July 19	930,284	1,029,429	845,548
Cumulative total, January 1 to date..	29,554,024	30,993,391	25,803,993

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended August 16 amounted to 49,969 cars, an increase over the previous week of 2,730 cars. Grain showed an increase in the Eastern division. Pulp and paper, merchandise and miscellaneous freight also showed advances in the East. Compared with the same week last year there was a decrease of 1,292 cars.

For the week ended

Total for Canada	Aug. 2, cars	1924 Aug. 9, cars	Aug. 16, cars
Commodity			
Grain and grain products.....	3,701	3,469	3,786
Live stock	2,147	2,047	2,407
Coal	4,671	5,837	5,792
Coke	151	130	152
Lumber	3,638	3,540	3,614
Pulpwood	2,048	1,671	1,705
Pulp and paper.....	1,706	1,725	2,021
Other forest products.....	2,201	1,943	1,951
Ore	1,412	1,253	1,560
Merchandise, l. c. l.	15,129	14,590	14,945
Miscellaneous	12,073	11,034	12,036
Total cars loaded.....	48,877	47,239	49,969
Total cars received from connections.....	27,540	27,475	28,100
Total cars loaded for corresponding week, 1923	51,522	50,491	51,261
Cumulative loading to date—1924.....		1,750,991	
1923.....		1,641,059	

PLANS FOR THE joint use of the Southern Pacific passenger station at Fifth street and Central avenue, Los Angeles, Cal., by the Union Pacific and the Southern Pacific, have been approved by the Railroad Commission of California, which has given the necessary permission to construct switches, grade crossings and other facilities. In return for permitting the Union Pacific trains to use its station, Southern Pacific freight trains will be routed hereafter on the Union Pacific tracks on the east bank of river at Los Angeles.

Great Northern Continues to Evidence Promise

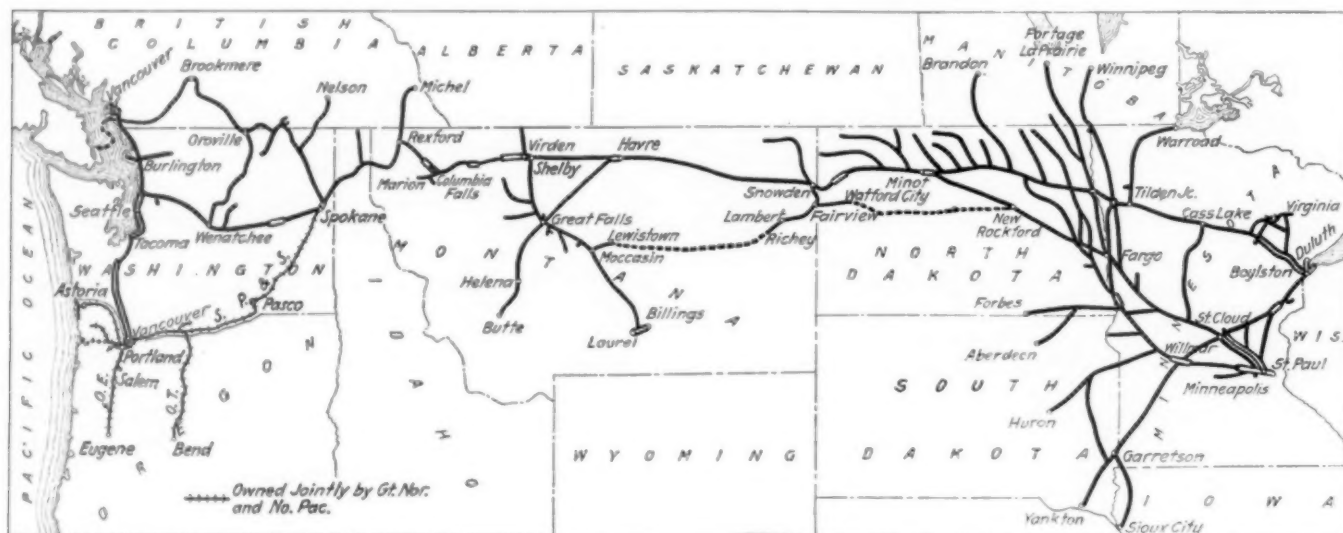
With Decreased Tonnage Shows Increased Net for Six Months' Period—What of the Future?

THE GREAT NORTHERN may be expected to benefit measurably this year from the marked improvement in the agricultural situation in the Northwest which has been in evidence for the past few weeks. It will benefit in two ways at least and possibly in more ways than two. The improvement in agriculture has resulted because the wheat crop in the United States will be a good one and because owing to difficulties in Canada which are expected to cut this year's crop to but half the Canadian record-breaking crop of last year, the price of wheat will be high. This will mean, first, a prospect for a greater tonnage of agricultural products. Second, and much more important, it will help to restore the buying power of the farmer-consumer in Great Northern territory and in the Northwest generally. Third, and likewise of great importance, the improvement in the situation is such as to promise relief from the hue and cry about

Northern's total 1923 traffic and furnished about 32 per cent of the total freight revenues. Such is the importance of agriculture in Great Northern welfare.

1923 Best Year Since 1916

The Great Northern had, in 1923, what was practically its best year from an operating standpoint since 1916. The total revenue tonnage exceeded that of 1922 by no less than 32.6 per cent. It was 11 per cent greater than that of 1920, in which year the previous record for revenue tons handled was made and 18 per cent greater than that of 1918, in which year the road moved the greatest volume of revenue ton-miles that it has ever handled. Revenue ton-miles in 1923 exceeded those of 1922 by 27.20 per cent. The reason that, with the record number of revenue tons, the revenue ton-miles of 1923 did not match the 1918 record is explained by the



The Great Northern

the distress of the farmer and a minimizing of the agitation about rate readjustments and more severe regulation generally which has for so many months proved such a worry to Great Northern stockholders and others interested in that property.

The Great Northern's revenue tonnage last year—due in large part to an enormous ore tonnage—was the greatest in its history although, because of an unusually short average haul on the traffic, revenue ton-miles were not as great as in one previous year, namely, 1918. The wheat tonnage was greater than in 1922. The crop was smaller than in 1922 but the tonnage was larger because of the heavy carry over into the spring of 1923 of traffic that could not be moved in the harvest season of 1922 because of the car shortage. At any rate, wheat constituted about 8 per cent of the year's total record-breaking tonnage. The total number of cars of wheat handled in 1923 was 67,468. The Great Northern carries also a large fruit and vegetable traffic. In 1923 the Wenatchee district fruit crop was the largest on record. It totaled 20,000 cars, of which 7,800 moved in October alone. The potato crop, principally from Minnesota and North Dakota, was large and totaled 25,000 cars. Products of agriculture as a whole made up 17.5 per cent of the Great

fact that the average haul in 1923 was but 241 miles whereas in 1918 it was 286 miles.

The total operating revenues in 1923 were \$120,077,772 as compared with \$103,452,937 in 1922, an increase of 16.07 per cent. Operating expenses totaled \$86,750,523, comparing with \$79,636,038, an increase of but 8.93 per cent. The increase was, in actual figures, \$7,114,485. There was an increase of \$2,101,718 or 16 per cent in maintenance of way and structures; of \$2,138,633 or 11 per cent in maintenance of equipment, and of \$2,967,074 or but 7 per cent in transportation expenses.

The reasons for saying that the 1923 operating results were practically the best since 1916 are several. First is the figure of net operating revenue—total operating revenues less total operating expenses—which was \$33,327,248 or \$9,510,349—39.93 per cent—greater than in 1922, even more in excess of that of any previous year back to 1917, about \$4,000,000 greater than in 1917 and nearly approaching the 1916 figure of \$34,612,528. The 1923 operating ratio of 71.21 was a substantial reduction from the 1922 ratio of 76.98 and was the best figure since 1917 when it was 66.91. The ratio in 1916 was 58.39. The Great Northern had a standard return for operations during federal control of \$28,666,681

which figure, based as it was on the average annual net operating income of the three years ended June 30, 1917, is the best measure we have of pre-war earning capacity. The net operating income of 1923 totaled \$24,731,992, which was 86.5 per cent of the standard return. This indicates that the Great Northern did not, in 1923, get back to a pre-war net earning basis. However, when one notes that the 1923 net operating income was equal to more than that of 1918 and 1919 combined, was eight times that of 1920, practically double that of 1921 and 43 per cent in excess of that of 1922, one readily gets an interesting viewpoint on the marked recovery which the Great Northern has made from its war-time and after-the-war depression.

Corporate Net Income

The corporate net income of the property in 1923 was \$18,067,947. This figure compared with \$10,865,672 in 1922 but otherwise it was not exceptional. Fixed charges were earned, to be sure, twice over and the net after charges was equivalent to 7.24 per cent on the stock. The Great Northern now pays 5 per cent dividends which totaled in 1923 \$12,473,605. There was, therefore, a margin over these dividends of about \$5,600,000. It has been estimated that had the Great Northern not had the benefit of dividends from its ownership in stock in the Chicago, Burlington & Quincy it would have earned its fixed charges but 1.66 times. Comparison of the 1923 net after charges with previous years shows that the 1923 net was, with the exception of 1922, the lowest in several years. Of course, in 1918 and in 1919 standard return was maintained by the accrual of standard return or rental for operation by the government, in 1920 by the accrual of guarantee and in 1921 by the substantial extra dividends received on the Burlington stock, and by a credit of \$7,223,100 interest on bonds of the Spokane, Portland & Seattle accrued for the period March 1, 1915, to March 1, 1920, of which only \$1,005,379 had been paid. In the 1923 income statement there is a deduction from the

in the first six months' period a reduction of about 13 per cent in total operating revenues. However, there was, on the other hand, a reduction of 20 per cent in total operating expenses so that net from operations was increased. In passing it may be pointed out that with decreasing traffic a greater decrease in expenses than in gross is usually considered a good indication that the management has its hands on its expenses. Further favorable indication of improvement is shown by the fact that of the decrease in expenses slightly over half was in transportation expenses which, in the first six months of 1924 were 20 per cent less than in the first six months of 1923. Of course, one does not properly draw too many conclusions from figures for six months only, particularly in the case of a property like the Great Northern which earns by far the larger part if not almost all of its net income in the latter months of the year. Thus, the net operating income for 1923 as a whole was \$24,731,992 whereas for the first six months of 1923 net operating income was \$4,291,270, equivalent to but 17.3 per cent of the year's total. The net operating income for the first six months of 1924 was \$5,810,101 and showed an increase of \$1,518,831. Net after charges for the first six months of 1923 was \$923,122, for the first six months of 1924 approximately \$2,600,000.

Long Time Trends

Admitting that the Great Northern has had its share of difficulty and realizing that, in spite of the great improvement in operating results that has taken place, the road has not as yet quite regained its pre-war status of prosperity, there are, nevertheless, many things of great promise in the Great Northern's situation.

Agriculture

Mention has already been made of the recent improvement in the agricultural situation. President Ralph Budd, in his own annual report, has some interesting comment on this sub-

GREAT NORTHERN OPERATING RESULTS, SELECTED ITEMS, 1914 TO 1923

Year ended June 30	Mileage	Revenue tons	Revenue ton miles	Average haul	Revenue per ton mile cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1914.....	7,781	30,857,598	6,930,296,000	225	0.795	663	22.44	\$76,854,937	\$47,769,774	\$29,085,164	62.16	\$20,453,551
1915.....	8,061	33,453,059	5,773,780,000	246	0.817	650	21.58	67,162,858	36,828,275	30,334,583	54.83	20,618,270
1916.....	8,053	28,927,130	7,809,817,000	270	0.771	663	22.87	81,262,478	43,914,076	37,348,402	54.04	27,600,614
Year ended Dec. 31												
1916.....	8,098	30,389,386	8,018,210,000	264	0.761	661	22.65	83,181,729	48,569,202	34,612,528	58.39	.....
1917.....	8,233	30,650,814	8,399,349,000	274	0.766	671	23.72	88,598,735	59,282,156	29,316,578	66.91	23,040,172
1918.....	8,260	30,948,659	8,844,787,000	286	0.870	684	25.89	100,698,520	84,429,245	16,269,275	83.84	20,063,270
1919.....	8,220	27,390,432	7,973,569,000	291	0.970	663	24.66	106,562,145	86,786,273	19,775,871	81.44	22,139,586
1920.....	8,174	32,948,292	8,518,841,000	259	1.054	684	25.34	122,597,865	113,947,115	8,650,751	92.94	19,304,097
1921.....	8,163	19,533,134	5,740,921,000	294	1.301	607	23.31	101,317,204	80,496,912	20,820,291	79.45	28,469,926
1922.....	8,261	27,450,587	6,882,465,000	251	1.134	656	23.96	103,452,937	79,636,038	23,816,899	76.98	10,865,672
1923.....	8,254	36,385,396	8,754,273,000	241	1.070	712	25.31	120,077,771	86,750,523	33,327,248	71.21	18,067,947

year's surplus of \$5,227,721 for the as yet unpaid S. P. & S. interest. Even if this amount were deducted from the 1921 net there would remain over \$23,000,000, which evidences, of course, the effect on the year's net of the extra Burlington dividends. In 1917 the Great Northern's net after charges was over \$23,000,000. For the fiscal year ended June 30, 1916, the net was \$27,600,000. The point is, in short, that as also shown by the comparison of net operating income in 1923 with the standard return, the Great Northern is not yet quite back on a pre-war earnings basis and that the increased Burlington dividends have not quite made up for the difference as it is finally reflected in net corporate income.

Six Months' Earnings Show Improvement

The Great Northern is not handling this year a volume of traffic as large as that which it handled in the earlier part of last year. The latest net ton-miles figures available—those for the first five months—show a reduction of about 14 per cent as compared with the same period of 1923. There was

ject. He points out that there has been a keener understanding of more scientific farming methods in the dry areas of the Northwest, particularly in Montana. He says further "The fact that in 1923, Montana produced 40,000,000 bushels of spring wheat of the highest bread making quality, which is more than was produced by any other state in the union, being the largest crop of wheat in the history of the state, is evidence that the state has made substantial agricultural progress. A large number of settlers who are experienced in farming under irrigation have located in the Milk River Valley and other irrigation projects. A large amount of land heretofore undeveloped or used only for native hay is now beginning to grow corn, beans, potatoes, sugar-beets and alfalfa. Dairying and hog raising are showing substantial progress. Only settlers who are fitted by experience to succeed are likely to locate in Montana in the future. There is a renewed interest in Minnesota, North Dakota, Montana and the states further west and the prospects are for an increased immigration in the future. There is an extensive

development in the diversified farming idea and the benefits can already be seen in all of the states in our territory, and conditions for the future appear favorable."

Ore, Lumber and Oil

The Great Northern handled in 1923 the largest tonnage of iron ore that it ever handled in its history. The tonnage totaled 17,676,007 and it was 48.6 per cent of the total revenue tonnage. The tonnage in the early part of the ore season this year was in excess of that in the early part of the season last year but more recently, as was to have been expected from the general business situation, ore loadings have been running slightly behind those of last year. Iron ore traffic on the Great Northern has averaged about 11,300,000 tons annually over the past ten years. It has furnished about 35 or 40 per cent of the road's total revenue tonnage but only about 9 per cent of the total operating revenues. The ore comes from the Mesaba Range and the Great Northern handles about 25 per cent of the ore from that range which, of course, is the most important of the country's sources of this basic mineral. The haul on the traffic is short; it averages about 90 miles. The revenues are fairly good per ton-mile which follows principally because the traffic is seasonal and for a large part of the year there is an enormous investment in docks and other equipment which is entirely idle. The trouble with the traffic, besides its seasonal character, is its varying volume in good and bad years. It is believed, however, that the conditions that brought about such depression as occurred in 1919 or 1921 and which proved so disastrous to the ore carrying roads were markedly exceptional and due primarily to after-the-war readjustment.

Products of forests do not form the important proportion of Great Northern traffic that they form of the traffic of the Northern Pacific or Milwaukee. In 1923 this group of commodities furnished only about 12.5 per cent of total Great Northern revenue tons and only about 16.2 per cent of the total freight revenues. These proportions may be expected to increase in the future. If one looks at the Great Northern map one will notice that the Great Northern has had its greatest development in the eastern part of its territory. As this territory prospers it will require more and more lumber—so much for the prospect for an increasing market. Now, with reference to the supply of west-coast lumber, it is a fact that as time goes on there may be expected an increasing production of lumber to the south of its present sources of supply. One of the greatest potential sources for the supply of west coast lumber is Oregon. The Great Northern owns with the Northern Pacific an equal interest in two important carriers serving this territory, namely, the Spokane, Portland & Seattle and the Oregon Trunk. There is a tendency further for the lumber mills to desire access to more than one railroad. These facts, combined with the factor of market, promise to the Great Northern, therefore, a much more substantial proportion of the lumber business than it has heretofore had.

A great deal of the west coast lumber goes by water. However, the volume that moves is sufficient to give the railroads a very sizeable tonnage. Lumber moving to such inland points as North Dakota or Minnesota could hardly move by water. This feature of the predominance of Great Northern development in the eastern end of its territory brings one to the factor of Panama Canal competition. It is generally recognized that the Great Northern has probably suffered much less from such competition than any of the several transcontinental carriers.

The Great Northern has been building up a fairly sizeable tonnage in oil. It serves the Kevin-Sunburst field located on its line extending north from Shelby, Mont. During 1923 the number of wells in this field was increased from 30 to 130. There has been enough oil produced in Great Northern

territory so that the road is now able to operate passenger trains on 2,000 miles of its line with oil burning locomotives including notably 1,100 miles of the main transcontinental line or half the distance from Chicago to the Pacific coast. The road is beginning to point to this as "the longest cinderless mileage of any railroad in the Northwest." The Great Northern handles a considerable volume of crude oil from the Wyoming fields moving in tank cars to Canada. This traffic it receives principally from the Burlington at Billings, Mont., and it is destined for Calgary, Regina, etc.

Passenger Service

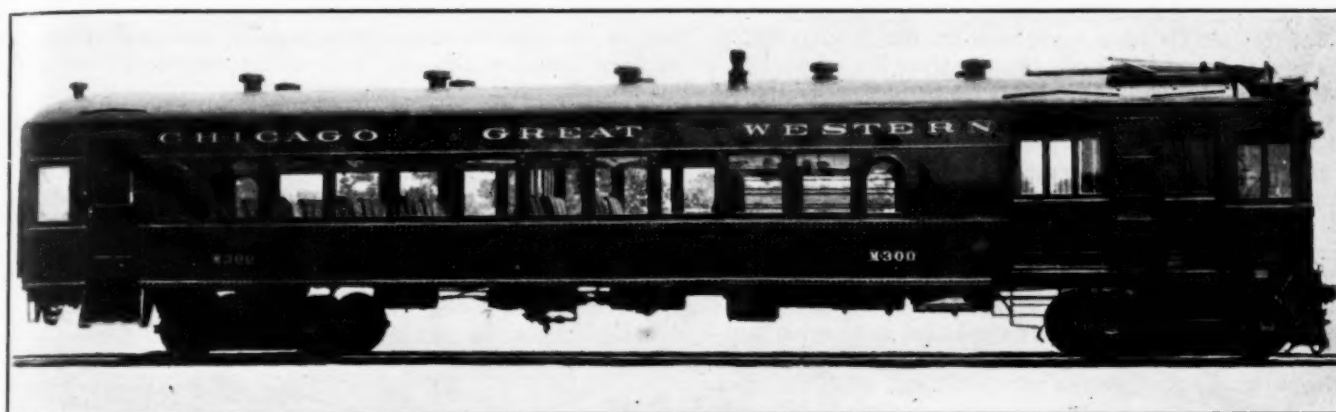
The Oriental Limited—the new passenger train to the northwest has received much advertising and much favorable publicity. An important feature in connection with it, however, has not received much attention. It is that it represents a step of greater importance than merely the installation of a somewhat remarkable new train. It means that the Great Northern is going in for passenger business. James J. Hill did not look with favor on passenger service. He desired the then much better paying freight service. The Great Northern has a good line to the Northwest and the management has decided to realize on its advantages from the standpoint of passenger service possibilities. This is the real factor of importance in connection with the installation of the Oriental Limited. It is understood that to date the new train has handsomely exceeded expectations.

Rehearing Asked on Certificate for New Line

WASHINGTON, D. C.

THE GREAT NORTHERN has filed a petition with the Interstate Commerce Commission for a rehearing and reargument in the case in which the commission, by a six to five decision, issued a certificate of public convenience and necessity to the Wenatchee Southern for the construction of a line between Wenatchee, Wash., and Kennewick, for the purpose of providing additional facilities to move apples from the Wenatchee district, in spite of the fact that the report held that apparently the earnings in prospect will be insufficient for some time to sustain the project.

The Great Northern in its petition says that the decision involves a novel principle which has not been adequately discussed and that in its presentation as a protestant against the granting of the certificate it had been assumed that the probable inability to earn expenses and charges would be a bar to the issuance of a certificate. Consequently it had not adequately discussed any possible exceptions which should be made to such a rule. The petition says a rehearing is warranted by the importance of the question involved and that the close division of the commissioners on the subject indicates at least that it is a doubtful question. It is also pointed out that both the examiner who conducted the original hearing and the commissioner who conducted the last one in the case, Commissioner Aitchison, had recommended that the application be denied. It is contended that the Wenatchee Southern, if built, would divert considerable traffic from the Great Northern in slack times but would leave the peak demand for cars very little affected because it would still be dependent upon the Great Northern for equipment. "It is respectfully submitted," the petition says in conclusion, "that the diversion of capital from the expansion of existing lines to the construction of unnecessary new ones and the diversion of traffic from an existing line, where it represents the margin of difference between profit and loss, to a newly constructed one, where it can mean nothing but loss, is not a step which should be taken during the present crisis."



Gas-Electric Motor Car Developed by the Electro-Motive Company, Cleveland, Ohio.

The Gas-Electric Passenger Car Returns

A 175-hp. Engine-Generator Set Drives a Two-Motor Truck in 35-Ton Car Seating 59 Persons

THE ELECTRO-MOTIVE COMPANY, Cleveland, Ohio, and the General Electric Company began the development of a new type gas-electric motor car about three years ago. The first cars of the new type have just been delivered, one each to the Chicago Great Western and the Northern Pacific. The cars are driven by a 175-hp. gasoline

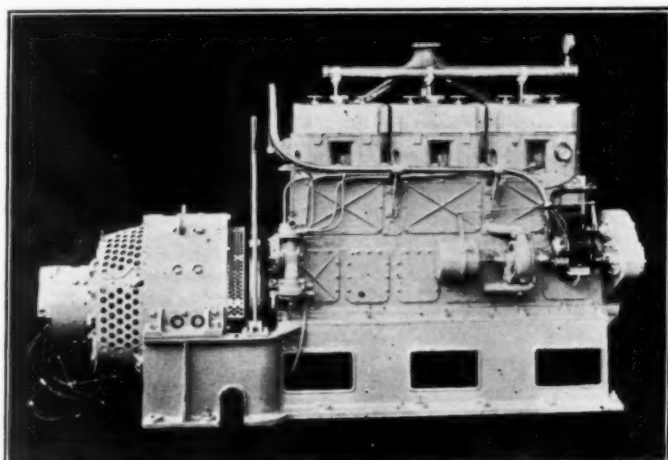
are equipped with single windows, but the frames are designed to receive additional storm windows. The floors are double with 1-in. hair felt insulation between. The side walls are similarly insulated up to the height of the belt rail, behind the letter board and under the roof. The entire design conforms closely to steam railway practice.

The car body is divided into four sections. At the front is the engine compartment, which is 8 ft. long. This contains the engine-generator set, the radiator and cooling fan, the air compressor and the operator's station, with the necessary gages and controls. Behind this are, in their order, the baggage and passenger compartments. At the rear is a vestibule with side door entrances, which is 6 ft. 3 in. long. This contains the toilet.

The power truck is a high-speed electric railway type, built with M. C. B. journals and bearings and equipped with two 105-hp. General Electric railway motors. This truck carries a load of 41,000 lb. at the rail. The cars have sufficient power to pull a standard 30-ton coach and make schedule speed in average branch line service. The maximum speed for which the car is designed to run on level grade is 50 miles per hour. Operating at this maximum speed under level grade conditions and making stops of one minute duration averaging eight miles apart, the maximum average schedule speed of which it is capable is 40.2 miles per hour. On the basis of the same conditions as to the frequency and duration of stops, the maximum average schedule speed decreases as the grade increases, to 22.8 miles an hour on a 2 per cent ascending grade.

Before work was started on the car, an extensive survey was made to determine, first, the size in greatest demand and, second, the performance requirements. This survey indicated quite clearly that while there was a demand for cars of various sizes, a car seating 55 to 60 passengers with 75 to 100 sq. ft. of baggage space and with sufficient power to pull a 30-ton standard coach over grades of $1\frac{1}{2}$ to 2 per cent, making the average branch line schedule, came the nearest to meeting most motor car requirements. Additional requirements which it was found should be met are a high rate of acceleration and provision for double end control.

The General Electric Company already had built more than 90 gas-electric motor cars from 1908 to 1912, some of which have passed the million mile mark in service and are said still to be showing remarkable operating economy. The



The 175-hp. Gas Engine-Generator Unit Which Is Placed Transversely Over the Forward Truck Bolster

motor, direct connected to a 110-kw. 700-volt generator which supplies power to two railway motors mounted on the power truck. They weigh approximately 70,000 lb. each, are 57 ft. 4 in. long over the body, by 9 ft. $9\frac{3}{8}$ in. over the belt rail, and have a maximum seating capacity in the passenger compartment of 59 persons, with 72 sq. ft. of floor space in the baggage compartment. The seats on one side are 54 in. long and on the other side 37 in. long, seating three and two persons per seat, respectively. The aisle clears 22 in. wide.

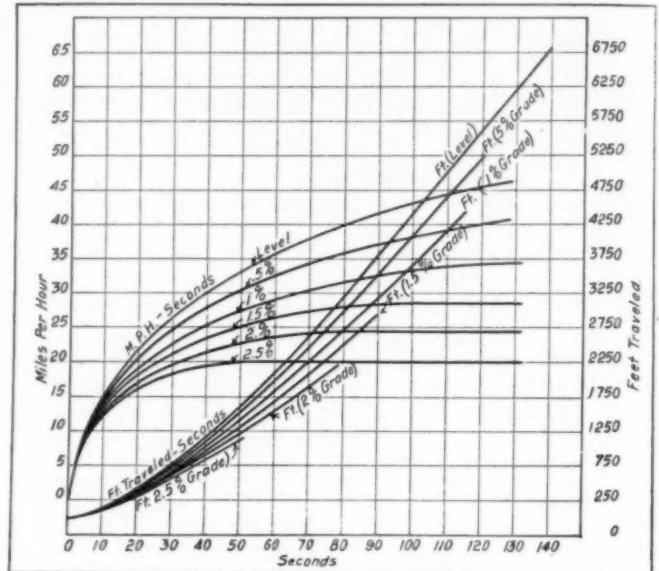
The car bodies and trucks were built by the St. Louis Car Company. The car bodies are of steel construction with an underframe, the design of which is considered sufficiently rigid to withstand the shocks and buffing strains caused by occasional impacts with heavy standard equipment. They

problem, therefore, was to develop a new car around the old. Great strides have been made in the development of the gas engine and in electric practice since the original gas-electric cars were designed, and the experience with the old cars was also invaluable.

The survey indicated that the car should not exceed a light weight of 35 tons and, furthermore, that it should be equipped with a railway type engine rather than an automotive, stationary or marine type, as these all have characteristics not suited to railway service. The Winton Engine Works, Cleveland, Ohio, co-operated in the new development and a railway type gas engine was designed around a marine type which has been in successful service for years. This engine has six cylinders of 7 in. bore by 8 in. stroke, with overhead valves and develops 175 hp. at 1,000 r.p.m. It is of rugged construction having a 4-in. crank shaft supported in seven main bearings carried in the lower half of the engine base, thus forming a firm foundation for the revolving and reciprocating parts. The cylinders are built up of a special grey iron water jacket cast in one piece, with cylinder sleeves of semi-steel inserted. The cylinder heads, which are cast in pairs, contain all intake and exhaust passages as well as the valve seats. This entire cylinder and cylinder head assembly is bolted to the upper half of the aluminum crank case. In the design of the engine the problem of its maintenance on the railroad has been carefully taken into consideration. All working parts have been made accessible and the engine is so mounted that any assembly or part of it may be repaired without disturbing the auxiliary apparatus. United States standard threads and bolt sizes have been used throughout.

Since the power of the engine is transmitted electrically, the location of the engine and generator is not fixed by the requirements of transmission. In this car, instead of being located along the longitudinal center line of the car at the forward end of the engine room, the engine and generator unit are located transversely directly over the center of the

connected to the engine carburetor. No automatic mechanism is involved in this type of control and a locomotive engineer has no difficulty in learning to control the car successfully after a few minutes' practice.



Calculated Time-Speed and Time-Distance Curves for the New Gas-Electric Car

The electric transmission permits a high acceleration and torque at low speeds and permits of operation in both directions with equal performance. The engine speed has no direct relation to the car speed and hence the maximum power of the engine can be utilized at low car speed under



Front End of the Car, Showing the Location of the Radiator

truck at the rear of the engine room. The body bolster for the forward truck is designed to form the engine foundation. The operation of the car is controlled by what is termed locomotive control, embodying field control of the generator and throttle control of the engine. The apparatus consists of a series-parallel control with forward, backward and neutral positions, in any one of which a wide range of speed control is available by the locomotive type throttle directly

severe operating conditions while, on the other hand, a high car speed may be obtained with a low engine speed when low power output is required, thus tending to promote fuel economy and low engine maintenance.

Three methods of starting the engine are available. A 32-volt starting motor, drawing current from a storage battery, engages the fly wheel. There is also a compressed air starting device which supplies air from the main reservoir of the

brake system through a distributor on the cam shaft to each of the cylinders. A standard car hose connection is fitted to the main reservoir pipe so that air may be drawn from any outside source available in emergencies. An effective hand cranking device is also supplied which may be operated with ease and without danger to the operator.

The engine cooling system includes a radiator of ample size which is mounted in the front end of the car, air being drawn through it by an electric motor-driven fan controlled by a thermostatic governor. The radiator is equipped with a manually controlled shutter so that with the variable speed fan and a conveniently located engine temperature gage, a uniform engine temperature, irrespective of atmospheric conditions, may readily be maintained. A convenient connection between the hot water car heating system and the engine cooling system is provided to keep the engine and radiator warm and from freezing when the car must be tied up where there are no terminal facilities. A 32-volt storage battery provides current for car lighting, generator excitation and motor cranking. This battery is charged by a 1½-kw., 32-volt generator mounted on the main generator shaft and enclosed in the same case.

The Chicago Great Western car was operated from the plant of the St. Louis Car Company, St. Louis, Mo., to Chicago, over the line of the Chicago & Alton. At Granite City, Ill., the car picked up a train crew and caboose which weighed 36,000 lb., and, with this load, was able to make passenger train schedule time over the Alton hill with its 1.4 per cent grade. The caboose was cut off at Springfield, Ill., and the car continued on to Chicago light.

The average schedule time from Bloomington, Ill., to Chicago was 43 miles an hour and the average gas consumption for the entire trip was 4 miles per gallon. On the trip two operators handled the car, neither of whom had had any previous experience with it. For the first half of the trip a member of the Electro-Motive Company organization handled the car and on the last half of the trip a representative of the Chicago Great Western was its operator.

One of the illustrations shows a theoretical time-speed distance curve calculated for these cars. Such tests as have so far been made indicate considerable improvement on what is shown in the diagram. One acceleration test included starting the engine and getting the car under way to a speed of 30 miles an hour in 33 sec.

Short Line Association Holds Annual Meeting

Reports of Officers and Committees and Discussion of Railroad Legislation Chief Business of Session

THE ELEVENTH ANNUAL MEETING of the American Short Line Railroad Association was held in the St. Francis hotel, San Francisco, Calif., on August 13, 14 and 15. The delegates arrived at San Francisco in two special trains early in the morning of the first day and the first session of the convention was called to order at 10 a.m., with President Bird M. Robinson in the chair. H. W. Brundige, railroad commissioner of the state of California, welcomed the delegates on behalf of the state and Ben B. Cain, vice-president of the Short Line Association responded in behalf of the association.

President Bird M. Robinson then read his report, an abstract of which follows:

Report of the President

"The special services now rendered outside of the general office in Washington consist of the services rendered by representatives in Atlanta, Chicago and San Francisco, and I submit the following concise statement of my views with reference to the work of the Law, Traffic and Labor departments up to this time.

"1. That each department has been established in response to a crying need from the members, and only after specific authority has been given by the members in meeting and by the executive board.

"2. That all have rendered valuable service; that all have been the subject of discussion in every meeting since they were established; and that the great majority of the members participating have endorsed each and directed that they be continued.

"3. That great benefits have accrued to the members as the result of the activities of each.

"4. That the service rendered by the departments has been one of the strongest and most helpful factors in aiding to increase and maintain the membership of the association. The fact that the association had 254 members in April,

1920, when the departments were authorized and that it has 517 members now, justifies me in making that statement. In my opinion, approximately one-half of the present members have been induced to join and remain because of the benefits which they derived from the departments.

"We have furnished the members rather full information about legislation pending before Congress, especially during the last session. I call your attention to the fact that the present Congress will meet again on December 1 next and continue until noon, March 4, 1925, and that all bills pending when Congress adjourned retain their then status before committees and on calendars.

"Some of the members have expressed the opinion that the cost of conducting the business of the association is greater than it should be. The members of the association contribute to its support in three ways—dues, assessments and contributions—and it is from those sources and those alone that the cost to them can be determined. The present rate of dues, \$25 per year for each member, became effective in 1918 and the yearly assessments beginning with 1919 have been based upon \$1.35 for each \$1,000 of gross revenue for each year since that time.

"The executive board has, in making assessments, carefully considered all of the information available, and has made the assessments with the intention to provide sufficient funds to conduct the business during the year in which the current assessment was made, but unfortunately some of the members during each year, because of being forced into bankruptcy or for other reasons beyond their control, have failed to pay, thus creating a deficit.

"The report of the treasurer indicates that if the members pay the amounts now due or which will become due there will be no outstanding obligations at the end of the present year.

"The railroads have refrained from participating in politics to any material extent during approximately the last 15 years. They have certainly expended much less money for

political effect than have the labor organizations, which latter, judging from appearances, have been very free, if not lavish, in their political expenditures in seeking to secure the enactment of laws and restrictions intended to deprive the owners of any returns on their properties, and also to impair the service rendered the public, much of it with the object of forcing government ownership of the railroads.

"The policy pursued by the carriers in refraining from political activities has not resulted in keeping them out of politics. On the contrary, the opposition has taken advantage of that submissive attitude, with the result that the carriers are now regulated, limited and controlled to an extent beyond anything ever anticipated.

"The earnest attempt of the carriers to retire from and to stay out of politics has been a complete failure, because the radicals and a large part of the so-called 'Progressive' element of the country have done everything possible to keep them in politics, and judging from the platforms and declarations of the candidates of some of the political parties the railroads are being thrust into politics to a greater extent than ever before.

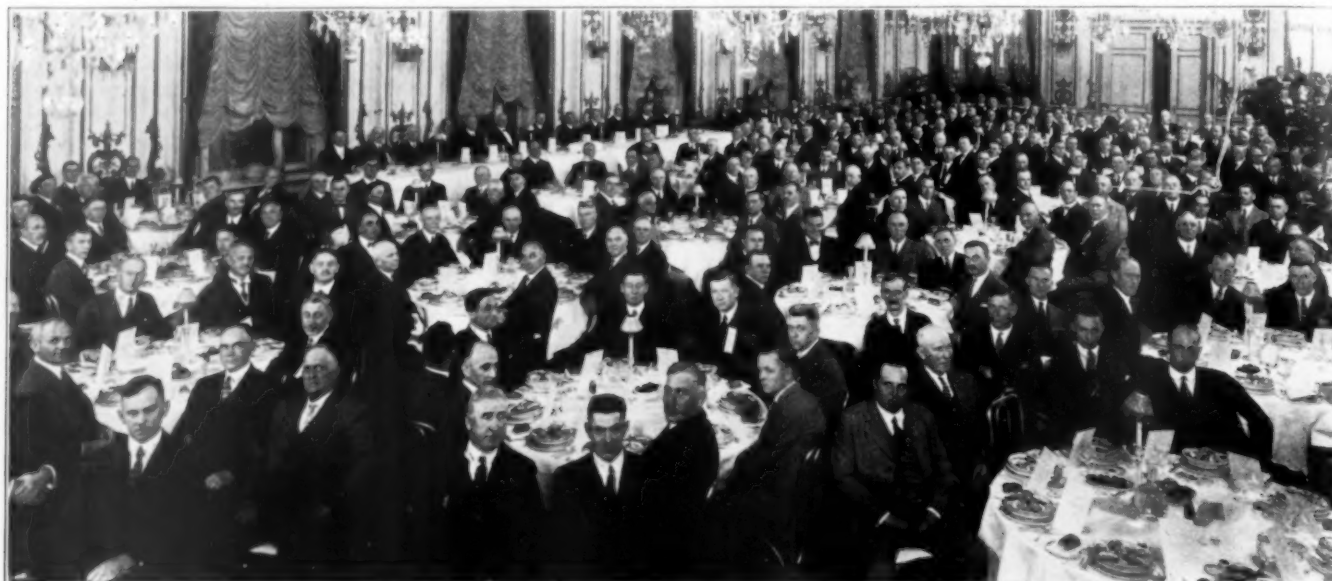
"The greatest danger to our transportation system is not

"In conclusion, I reiterate in a concise way what I regard as the essential elements in maintaining this Association as a successful, serviceable organization. Those elements are (1) numerical strength, (2) intelligent and experienced leadership, (3) adequate financial support, (4) active co-operation, and (5) location of headquarters at Washington, where the labor leaders, radical organizations and other antagonistic elements are located."

Report of the Legal Department

Ben B. Cain, vice-president and general counsel of the association, presented the report of the legal department. In telling of the appearance of representatives of the association before committees of Congress and the Interstate Commerce Commission, Mr. Cain stated that the association had insisted upon the allocation of all short lines in the proposed plan of railway consolidation. Where a short line has more than one connection with trunk roads, the short line must be given the opportunity of stating ultimately which one of the trunk roads it will affiliate with.

In appearing at the Interstate Commerce Commission's



Delegates to Short Line Convention at Dinner Tendered by Pacific Railway Club

so much from the extreme radical element which is now being supported to a very considerable extent by the leaders and some of the members of the national unions of railroad employees, but from a larger and more influential number of citizens who term themselves 'Progressives.' A large element of our people who are dissatisfied with some one or more existing conditions, know, in their self conceit, that they are 'Progressives' and intolerantly brand all who oppose them as 'Reactionaries'; and as they use that latter term, it is intended to slur, if not to damn, those who oppose them.

"The short line railroads of the country, serving the rural communities, as most of them do, come in close contact with their patrons, and are therefore in a position to present the facts, obtain a friendly hearing, and to secure proper consideration of their problems by their respective senators and representatives. In view of the fact that the short lines are a part of the whole rail transportation system, that a large part of their traffic either moves to or from the trunk roads and that the general welfare of both classes is inseparably linked together, they can best serve their own interests by actively participating in the great work that is to be done for the protection of all.

hearings with reference to a revised accounting system, the representatives of the association have asked to be heard particularly with reference to the matter of depreciation. It is important to the short lines, on account of their limited life due to the character of traffic that they handle, that the matter of their depreciation be considered separately from that of the trunk lines. In addition to appearances before commissions, committees, etc., the Short Line Association's legal department passed upon 771 cases of law submitted to it by the member roads.

Mr. Cain dwelt particularly upon the legal department's activities in connection with the effort that has been made for the repeal of the recapture clause of Section 15-A of the Transportation Act. He stated that the repeal of the recapture clause would not affect the trunk lines but would affect adversely most of the short lines of the country. He stated that the valuation of roads by groups, including unnecessary roads, works a hardship on the short lines which are also included, and he recommended the abandonment of roads not operated in the public interest, or that they be not included in the valuation groups.

President Robinson stated that it is the policy of the Short Line Association that the thin or poor lines are entitled at

least to the cost of service, this cost consisting of operating expenses, taxes and a fair return on the investment in the property. Wherever conditions permit it, this cost of service should be supplied out of joint rates.

Clarence M. Oddie, Pacific Coast representative of the Short Line Association, stated that a majority of the Pacific coast roads desired the removal of the recapture clause from the Transportation Act. These roads have been tendered their tentative valuation by the commission and this valuation does not average 50 per cent of book value and is much less than the actual value of the properties. The application of the recapture clause under a valuation such as this would act to confiscate their property. One road would fall \$100,000 per year short of earning its bond interest.

Mr. Cain stated that the attitude of the Short Line Association is that if an amendment to the recapture clause is presented, which does not meet the needs of the short line properties, the association will try to get an amendment to the clause so that a readjustment of divisions between roads could be made so that roads earning more than six per cent would have to relinquish a part of their division to connecting roads that are earning less than six per cent, and to relieve any railroad, whose revenue comes from natural products such as coal or lumber, from the effect of the clause.

The matter of legislation having occupied practically the entire morning session, J. T. Cochrane of the Alabama & Northwestern, introduced a resolution that the Short Line Railroad Association declare itself opposed to the initiation of any changes in the Transportation Act. His resolution was unanimously adopted but it was brought out in the discussion that the resolution did not stand in the way of the association's officers protecting the members by suggesting changes in the Transportation Act, provided proposed changes, contrary to their interests, were introduced by others.

Other Reports Were Presented

Other business included discussions of federal valuation, developments in the labor problem, per diem, bus line competition and the report of the finance committee and the election of officers.

The session on Thursday afternoon opened with a statement by Maurice A. Zook, president of the Montana, Wyoming & Southern, on the purpose and intent of the federal valuation act. He told just what the commission and properties had done under its provisions. Following this presentation, President Robinson stated that he had advised all member roads to make a valuation of their own property and file it with the Interstate Commerce Commission. Where a physical valuation has not been made, the road's book value should be made the basis of the statement.

President Robinson stated that it is his belief that the Howell-Barkley bill is the most important problem facing railroad management today. The most serious phase of the bill, he stated was that Congress would fix wages and working conditions by legislation which would mean that wages could practically never be lowered. It will probably be brought up in Congress the first Monday in January and most certainly before the first Monday in March, as it cannot be brought up, under the rules of the House, within six days of the close of the session.

On Friday morning, J. A. Streyer, traffic manager of the Association, discussed the present status of the Fourth Section. He quoted from Commissioner Eastman's statements in the Southern Class Rate Investigation (Docket 13499) and stated that if the commissioner's findings become effective, the through rates in southeastern territory will, in many cases, be less than the proportion of the rate

that some of the short lines now receive. He predicted that if the commission adopted Commissioner Eastman's report, from 25 per cent to 50 per cent of the short lines in the southeastern territory will be wiped out. According to his statement, the executive board of the Trunk Lines Association will make an effort to prevent Commissioner Eastman's findings becoming effective, and the Short Line Association will join them in the settlement.

Chairman W. T. Alden of the finance committee presented a report showing the financial condition of the association. The receipts and disbursements during the first six months of the current year amounted to over \$72,000 and it is estimated that the expenditures during the next six months will amount to about \$54,000, leaving a deficit of about \$25,000 at the end of this period.

It was recommended by the finance committee that detailed figures of receipts and expenditures should be furnished to all members and that a certified public accountant's audit of the association's affairs should be secured for the year 1923 and for the first six months of 1924, and that in future such an audit should be furnished members at least 30 days before the date of the annual meeting.

Moultrie Hitt, assistant to the president of the association, presented a comprehensive statement of the per diem situation insofar as it refers to the short lines. Discussion by the delegates was to the effect that the cancellation of Paragraph B of Rule 6 would serve the short lines' interests ideally, and it was also stated that many of the short lines had succeeded in making individual agreements with the trunk lines with which they connect so that the strict carrying out of the per diem code was not in effect in their case.

Bus Line Competition

While the delegates were unanimous in the statement that truck and bus line competition seriously affected their earnings, detailed remedial measures were not presented. One delegate stated that the passenger revenue of his road had been reduced from \$1,800 to \$400 per month, but said that this was not the result of stage and bus line competition, but was due to farmers and others traveling in their own motor cars and hauling their products in their own trucks. This road put on motor cars, doubling the service formerly given by steam trains, but did not succeed in re-couping its loss.

It was also stated that the movement of freight by manufacturers on truck lines was cutting into railroad revenues seriously, but that concerns hauling by truck could be induced to return to rail transportation if they could be gotten to inform themselves as to the actual cost of operation. In a case where this was done, it was shown that the trucking cost amounted to more than 25 cents per ton-mile in the three and five-ton trucks that were in use.

Presenting the status of consolidation of railroads, Mr. Cain stated that when trunk lines apply to the commission for consolidation, a short line that will be prejudiced by such consolidation should appeal to the Interstate Commerce Commission and should insist upon being included in the consolidation or given some other relief.

Election of Officers

Following the adoption of resolutions, including one authorizing President Robinson to organize a committee to go to Europe to study government operation so as to be prepared to present the facts upon their return, the following officers were elected for the coming year: President, Bird M. Robinson; general counsel, Ben B. Cain; vice-presidents, F. J. Lisman, F. J. Lisman & Co., New York; C. W. Pidcock, Georgia Northern; C. C. Carey, Sabine & Neches Valley, and C. L. Eaton, Indian Valley; vice president in charge of traffic department, L. S. Cass; secretary and treasurer, T. F. Whittelsey. Members of the executive

committee were chosen as follows: Pacific district: G. F. Detrick, Sacramento Northern; D. M. Swobe, McCloud River; H. B. Tooker, Bingham & Garfield; M. L. White, Yosemite Valley; C. M. Oddie, western representative; Eastern district: W. L. Sykes, Grasse River; Wm. E. Halm, New York Dock; H. B. Stewardt, Akron, Canton & Youngstown; John W. Dwight, Virginia Blue Ridge; Southern district: J. T. Cochrane, Alabama, Tennessee & Northern; J. L. Nisbet, Georgia, Florida & Alabama; Sturgis G. Bates, Eastern Kentucky; T. W. Parsons, Charlotte Harbor & Northern; H. W. Purvis, Georgia & Florida Railway; Western district: William G. Dows, Cedar Rapids & Iowa City; K. D. Klemm, Kaw Valley & Western; W. C. Orem, Salt Lake & Utah; H. A. White, Red River & Gulf; E. D. Luce, Minnesota & Western.

Pacific Railway Club Tenders Dinner

A dinner was tendered to the delegates by the Pacific Railway Club on Thursday night, August 14. At the dinner President Robinson again addressed the members. Other speakers were E. O. Edgerton, president of the East Bay Water Company, and Robert M. Lynch, vice-president and general manager of the San Francisco Chamber of Commerce. Mr. Edgerton discussed further aspects of the railroad problem, while Mr. Lynch spoke of the attitude of the business interests toward the railroad situation. Mr. Robinson said in part:

"I have been asked to discuss the railroad problem from the short line point of view. In order to meet the needs of the public for railroad service it has been necessary to double both the number of workers and the capital invested. With twice as many men and twice as much capital, they have carried two and one-half times as many tons of freight and they have carried each ton of freight one-third farther; so that the total service which they have rendered, measured in tons, one mile is over three times as large. It is interesting to note that the public is supporting only 80 per cent of the investment per ton of freight which it supported 20 years or 10 years ago.

"The wages situation can be put in very simple form from the standpoint of the manager. In 1900 it cost less than \$1 in wages for every ton of freight moved; even in 1910 it cost only \$1.15. In 1923, it cost \$2.38. It would

seem the most natural thing in the world that under such conditions you would increase the price which you asked for your services—in other words, increase freight rates. Everyone else's prices had been increased. By 1913 the general level of prices stood 25 per cent above those of 1900; and by 1917 they were more than twice as high. Yet where the railroads had received \$1.80 per ton in 1900, they were getting only \$1.86 for hauling a ton in 1913; and \$2.04 in 1917. The average haul had increased from 243 miles in 1900 to 288 miles in 1917.

"Regulation can never put rates permanently below the point at which they will cover the \$3,000,000,000 of wages which must be paid, the \$350,000,000 of taxes, the \$1,900,000,000 paid for materials like coal, steel, railroad ties, and such things, and leave enough profit on the \$20,000,000,000 of investment to attract new capital. The year 1923 was a profitable year for the railroads, but even in that year the amount left over for interest and dividends was only \$977,000,000. This amounted to 4.47 per cent on the property investment and 5.1 per cent upon the tentative valuation placed upon the roads by the Interstate Commerce Commission. When we remember that during last year the member banks of the Federal Reserve system made 9.5 on their capital stock and surplus, after paying all expenses, losses, taxes, interest on deposits and borrowed money, it must be obvious to everyone that a return of 5.1 per cent will not seem very attractive to new capital, especially when any road that makes over 6 per cent must pay one-half of the excess to the government. The railroads have no guarantee of earnings. But if they make more than 6 per cent, they are sure to lose half of it.

"Yet the investment of new capital is the one great means for decreasing the cost of transportation and the rates to the shipper. The wise investment of additional capital, coupled with managerial efficiency and improved methods, will reduce expenses of operation by increasing the output per worker. Fortunately, interest rates are falling and there is prospect for abundant capital at lower rates than have prevailed in the past, for the expansion of industry. If the public will give the railroad managers a breathing spell and leave rates undisturbed for a period of five years, the operators of the railroads will utilize those rates in such manner as to reduce operating expenses, increase the capital investment, and bring about both lower costs and better service."



On the Anatolian Railway in Asia Minor



A Banana Pier

Central America's Largest Road American-Owned

International Railways, with 600 Miles of Line, the
Largest Foreign Road Owned in U. S.

By F. J. Lisman

PART I

THE INTERNATIONAL RAILWAYS OF CENTRAL AMERICA with 600 miles of railway, located in the republics of Guatemala and Salvador form today the largest American-owned railroad enterprise outside of the United States. The lines of this company form, with two minor ex-

The company's charter is for 99 years. Parts of the road become the property of the government after that time, but most of the road may be purchased by the government at a valuation. In the meanwhile during the entire period, the company is free of taxes and imposts of every kind, state and local, and even tickets and bills of lading cannot be subjected to a stamp tax. The company also has the right for the entire period to import free of duty any materials necessary for construction or maintenance.

General Features

With the exception of some parts immediately adjacent to the Caribbean coast, these countries are a jumble of mountains. Except for only the first 100 miles leading inland, each division overcomes grades greater than those involved in crossing the Adirondacks or the Ozarks.

The lines are of 3-ft. gage, excepting 16 miles with maximum grades of 3 per cent compensated, and a maximum curvature of 16 deg., although there are few curves greater than 12 deg. Practically all the material which has gone into the construction and operation of these lines is of American manufacture. It is difficult for one familiar with American operation to visualize the great difference in every phase between this road and those at home. The company's traffic density is but 60,000 ton-miles per mile of line, about 6 per cent of that of railways in America. On the other hand, the rate per ton-mile is about 8 cents, or several times our rates.

Character of Traffic

The principal commodities handled are bananas and coffee. The import traffic furnishes about 20 per cent of the total revenue. The passenger traffic is largely second class, which is carried for 1½ cents a mile, for which the pas-



A Spur Track in a Banana Plantation

ceptions, the entire railway system of these countries. They penetrate the traffic producing territory in such a manner that they form the backbone for all agricultural and commercial activity.

There are many features in connection with this railway company that are of interest because they are so entirely different from anything in the United States.

sengers get distinctly second-class accommodations. The second-class coaches have four long wooden benches without backs, two along the side of the car and two down the middle. The natives, like the negroes in the South, like to ride on the cars and spend their money quite freely for railroad fares; they will frequently spend all their money for a ticket, say for a 50-mile ride, and walk back.

The prevailing rate of wages for common labor is 20 cents a day in the interior. Although it is \$1.50 a day in the lowlands along the east coast, where the United Fruit Company operates.

The company uses Mexican fuel oil altogether for fuel, because there is no fuel within the country other than wood and even wood suitable for fuel is scarce in most sections.

Guatemala

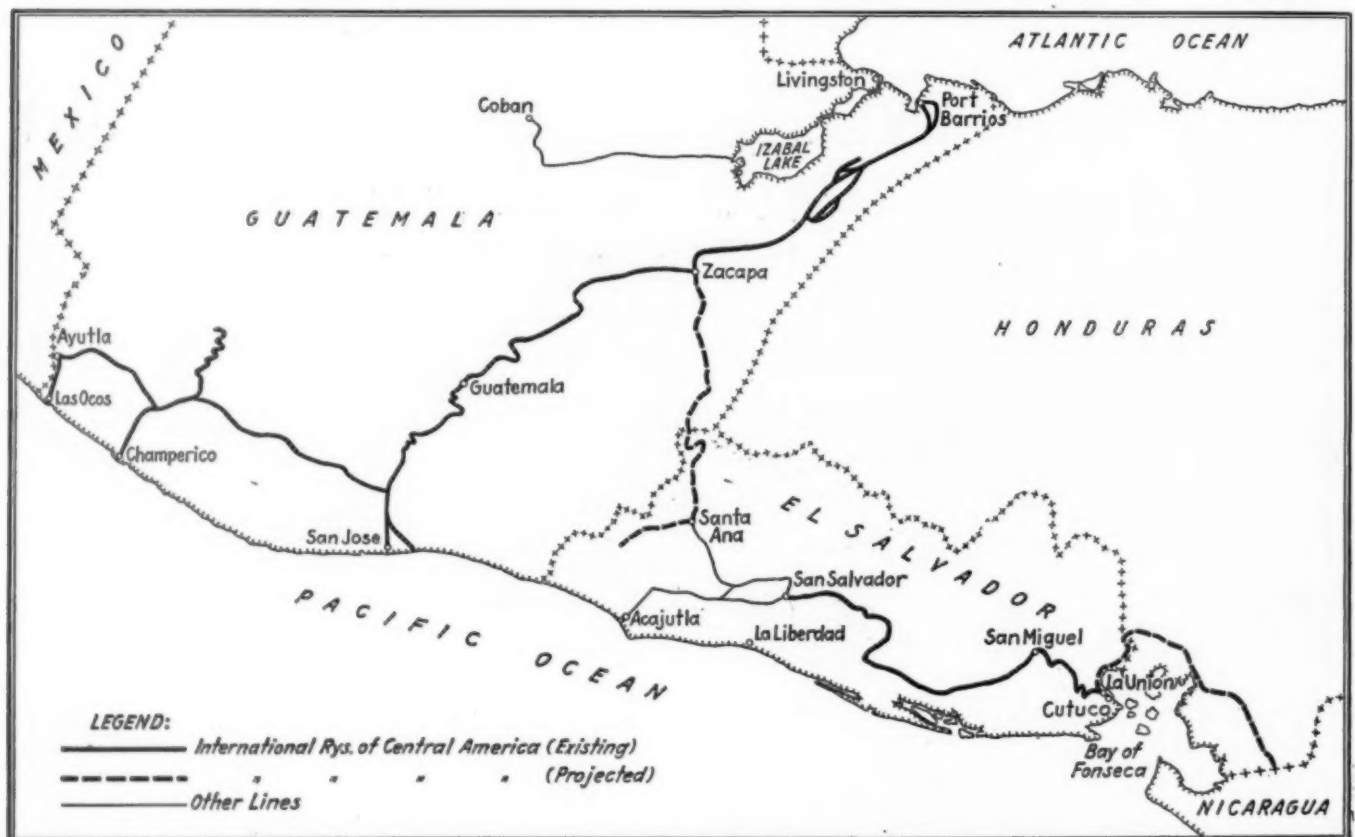
The first railroad to be built in Guatemala was finished about 35 years ago and was an enterprise of the late C. P. Huntington. It extended from the Pacific Coast at San Jose to Guatemala City, the capital, a distance of about 75 miles in which the road ascends about 5,000 ft. In fact,

The government of Guatemala started to build such a line in the early nineties, but exhausted its credit when the road was about one-half built. In order to find someone to complete it, it was necessary to donate the existing line. In 1904, the International Railways of Central America was organized under the laws of New Jersey to take over and connect up the railway system of Guatemala. The necessary capital was furnished by three outstanding American railroad builders—Minor C. Keith, William Van Horne and General Thomas Hubbard. Mr. Keith, who built the first railways in Central America, that is in Costa Rica, under unbelievable difficulties, took the laboring oar and became and still is president of the company.

This company took over from the government 114 miles of already constructed line which was in a deplorable condition; rebuilt this mileage and extended the road up to the capital city.

Difficulties of Construction

About 12 miles of the road near the coast, originally built by the government on a 5 per cent grade over a spur of



The Railways of Guatemala and El Salvador

2,600 ft. of this ascent are made in 16 miles on a 3.6 per cent grade. Two-thirds of the bonds of this line, known originally as the Guatemala Central Railway, are still owned by the Southern Pacific Company.

The bulk of the population of Guatemala lives on the Pacific slope at an altitude of from 2,000 to 5,000 ft. The principal products of that country, coffee and sugar, are shipped principally to the United States and Europe. This indicates the importance, therefore, of a direct outlet to some port on the Atlantic. The distance from Guatemala City from waters leading into the Atlantic is about 200 miles, of which nearly one-half penetrates an unhealthy, tropical jungle. The capital itself enjoys a remarkably agreeable climate with warm afternoons and cool nights all the year round.

mountains had to be abandoned and rebuilt on another location at a cost of about \$100,000 a mile. This jungle line extending through land which 20 years ago was considered entirely worthless is now the seat of the great activities of the United Fruit Company which now produces annually in this territory about 5,000,000 bunches, or what are locally called "stands," of bananas. The activities of the fruit company extend for 60 miles inland along the railroad and this section of the country is geographically and commercially entirely separate from the rest of the republic. It is known locally as the "Banana Republic." American money only circulates there and the native depreciated currency is not accepted by anyone in that district. This section has been drained and made sanitary. The International Railways have a contract which guarantees to the line the entire traffic

of the fruit company. Earnings from the carriage of bananas now amount to \$750,000 per year and are certain to increase.

The railroad from about M. P. 30 follows the Motagua river, practically a water grade up to M. P. 136 where the ascent of the mountain commences.

The banana belt has a total rainfall of about 90 in. a year. This rainfall rapidly decreases as the line runs southwest and as the hills cut off the moist winds, until at Zacapa, M. P. 107, the country is practically a desert. At M. P. 170 the line reaches a section where there are six months of dry season and six months of rain, the dry season lasting from about the first of November to the first of May. The rainfall around Guatemala City is about 50 in. and in the country on the Pacific slope and adjacent to the Mexican

that region if it were to be accessible to the coffee, sugar and cocoa plantations which are located in the hills above the line. The country between the railroad and the Pacific coast is producing very little at this time, as the Indians refuse to live in the unhealthy low country. These lowlands when properly drained and irrigated should prove extremely rich, suitable for sugar and bananas. They can be made available for these purposes at a small expenditure. From the division extending from Guatemala City to Ayutla on the Mexican border, three branches extend to the ports of San José, Champerico and Las Ocos on the Pacific coast. The wharf at Las Ocos, opposite the Mexican border, was wrecked by a storm and has never been rebuilt. The two other "ports" are nothing but piers built into the Pacific ocean. Weather permitting freight is loaded on lighters and carried out to steamers anchored a half-mile or a mile off-shore. Guatemala has absolutely no natural ports on the Pacific coast. Therefore, no doubt, in the course of a few years the bulk of the country's tonnage now going out through these Pacific roadsteads will move out through Port Barrios on the

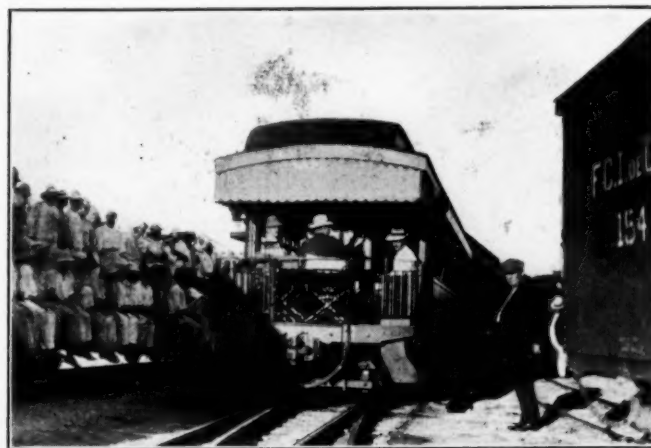


A Railway Cut, Showing Steep Sides to Mitigate Water Erosion

border somewhat heavier. All of the Pacific slope has six months of dry and six months of wet weather. The rains at the commencement of the rainy season start with showers around ten o'clock in the evening and gradually come heavier and earlier in the day. It practically never rains in the forenoon—in fact, it seldom rains before three o'clock in the afternoon, but then when it rains, it pours.

From Guatemala City to the Atlantic coast, the line forms a bridge furnishing an outlet for the products of the thickly settled highlands to their markets. It has practically no local traffic outside of that from above-mentioned banana belt near the Atlantic, though before many years much of the land now barren will be irrigated. This can be done very cheaply and will produce a very heavy traffic.

The line from Guatemala City to the Mexican border runs in a general southwesterly direction for about 100 miles over the foothills about 30 miles distant from and parallel to the Pacific coast. It necessarily crosses all the watersheds at right angles and varies from an elevation of about 400 to 1,500 ft. This was the only logical location for a railroad in



A Typical Group of Workmen and a Passenger Train

Atlantic side and the traffic from the Pacific ports of Guatemala will be confined strictly to business destined for Pacific coast points.

Salvador

The 157 miles of railway which the company owns in the Republic of El Salvador are at present operated entirely separate from the Guatemala lines. A gap of about 150 miles between the Salvador and Guatemala lines is in course of construction. The road now in operation extends from San Salvador, the capital city, to the waters of the Pacific at Cotuco on the Bay of Fonseca, a distance of 156 miles, and touches practically all places of importance in the eastern part of the country.

The City of San Salvador, only about 18 miles distant by air line from the Pacific ocean, is located at an altitude of about 3,000 ft. The railway after leaving San Salvador descends for 70 miles on a 2 per cent grade compensated for curvature over a very hilly country to the Lempa river which it crosses near sea level over a steel bridge 1,627 ft. long, with one 400-ft span and four 200 ft. spans. The remaining 90 miles of the Salvador line are fairly level, except near the port on a division which was built many years ago by the Salvador government.

San Miguel, about 38 miles from the port, was the capital of Salvador for many years and the most important town in eastern Salvador. Up to the time this railroad was constructed, it took ten days to reach the City of Salvador, only 120 miles away, and during the rainy season even this slow communication was frequently interrupted.

The line in Salvador, like the Pacific line in Guatemala,

more or less follows the foothills which extend a distance of about 25 miles from the Pacific coast. The line receives its freight from the uplands, the same as in Guatemala. Its freight consists largely of coffee, although the production of hemp, sugar and cotton is on the increase. This railway has been finished only about two years. The cultivation of products other than coffee which had previously been utterly impossible, is now being pushed.

Physical Conditions Along the Railway

In the lowlands the soil is largely clay, which gives much trouble during the rainy season; in many places it has been necessary to haul in better ballast material for the road from the uplands. On the higher levels there is a very large amount of volcanic ash, which seems to be the most desirable soil for the growth of the coffee tree, but constitutes the most undesirable material imaginable for a roadbed. This volcanic ash, which stands up almost like hard pan in the dry



A Yard on the International Railways

season, simply flows away during the wet season, like the worst kind of clay, after it has absorbed a certain amount of moisture and has been under pressure. During the first year or two after the lines through such soil were constructed, the company had to spend several hundred thousand dollars for the hauling in of better material, or in part for relocation of the line.

Standards of Construction

The standards of construction call for banks 12 feet wide at the top and for 16-ft. cuts. Most of the cuts, strange to say, are built without any slope. Experience has shown that the rains do the least damage on a vertical cut. This is due

to the fact that except near the Pacific coast, the rains are seldom accompanied by wind and therefore do no damage to a slope except where the water gets a chance to soak in.

Operating Practices

All the important bridges on the company's lines are of steel. The standards vary from Cooper E-40 to E-50. The company at the close of the fiscal year 1923 had 80 locomotives, about one-half of which were acquired during the last ten years. Consolidation locomotives in use have a boiler pressure of 180 lb., a tractive effort of 21,400 lb. and a total weight of 93,400 lb. These locomotives haul 290 tons on a 2 per cent grade and 165 tons on a 3 per cent grade. The average cost during 1923 for fuel was about 15.71 cents per train mile, compared with 18.42 cents for 1922. The total cost per locomotive mile amounted to 42.63 cents. The company owns a total of about 1,350 freight cars, of which 614 are box, 294 flat and 285 cars built especially for the banana trade. It also has 113 passenger train cars.

Most trains carry both passengers and freight. No doubt as the passenger business grows, mixed train service will be gradually eliminated. Light, helping and switching locomotive mileage constitutes but 20 per cent of the total, which shows very careful operation considering the hilly nature of the country.

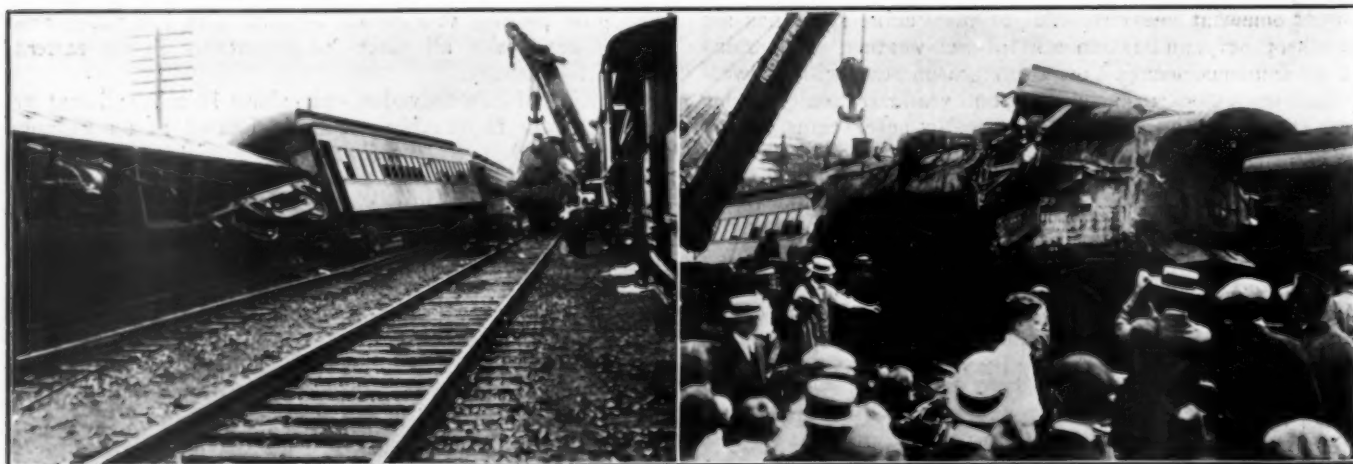
Of the total train mileage 13 per cent is passenger train miles, about 40 per cent mixed train miles and 42 per cent freight train miles.

In 1923, import freight, about one-fourth of which consisted of flour, was about 10.5 per cent of the company's freight tonnage. The export freight, amounting to 198,000 tons, formed 38 per cent of the company's tonnage, including 120,000 tons of bananas, 58,500 tons of coffee and 14,000 tons of sugar. The balance consisted of timber, hides, etc. The local freight was only 35 per cent of the company's business; about 17½ per cent, or about 100,000 tons, consisted of company material. The largest item of local traffic, forming about 5 per cent of the whole tonnage, consisted of corn and beans, which are not only the staple, but almost the exclusive food of 90 per cent of the population.

The road has about 3,000 ties to the mile, some of which are native hard wood, but most of the renewals are being made with creasoted ties from our southern states. The rail is mostly 60 lb. and is well anchored on curves.

The principal shops of the company for the Guatemala lines are located in the City of Guatemala, near the station and are well equipped to do the company's work.

[The second and concluding part of this article will appear in an early issue of the *Railway Age*.—EDITOR.]



International

Derailment of Reading Train at Cranford, N. J., When It Struck a Motor Truck at a Highway Crossing

Directors Approve Van Sweringen Merger Offer

With Acquisition of Erie and Pere Marquette, Cleveland Interests Will Control 9,600 Miles of Line

DIRECTORS OF THE ERIE, at a meeting in New York on Monday, and directors of the Pere Marquette, at a meeting on Thursday, voted in favor of accepting the proposals made by the Van Sweringen interests of Cleveland for merger of these properties into the again to be enlarged Nickel Plate or Van Sweringen system. The Erie directors further authorized President F. D. Underwood to advise the stockholders of the company to this effect and to recommend to them their participation in the plan. Announcement after the Erie directors' meeting was made as follows:

"Directors of Erie Railroad unanimously adopted a resolution that in opinion of the board the unified control and operation of the railroads of this company and of the New York, Chicago & St. Louis, Chesapeake & Ohio, Hocking Valley and Pere Marquette, would be beneficial to this company and to the public which it serves; and that the board recommend to Erie stockholders that they accept the proposal by O. P. and M. J. Van Sweringen therefor, and deposit their stock under deposit agreement annexed to such proposal and give to the committee provided for therein the proxies therein requested; also that the president forward to the stockholders contemporaneously with the forwarding of similar communications to the shareholders of the other companies, a letter setting forth the substance of the plan and the reasons of the board in recommending its acceptance by the shareholders."

Approval of the merger plans was given at meetings of the boards of directors of the Chesapeake & Ohio and Hocking Valley on Monday and announcement was made at that time that the Nickel Plate board had already voted its approval. With the approval by the Pere Marquette board—the last of the five boards to take such action—the next step is approval by the stockholders of the five companies. Terms of exchange of stock, etc., have not yet been officially announced but they are presumed to be such as outlined in a semi-official statement made public on August 7. Exact details will be given in the letters about to be sent to the stockholders asking their participation. Then will follow the necessary approval of the merger plans by the Interstate Commerce Commission, application for which will be presented, it is said, within the next few days. The noteworthy feature of the negotiations is the speed at which they have thus far progressed.

If plans already announced as contemplated are brought to their expected maturity, the Van Sweringen interests of Cleveland will have brought under their control a total of about 9,600 miles of line. The plans call for the formation of a new company, the name of which has not yet been decided upon. Stock of this new company will be exchanged for the securities of the companies that it is proposed to acquire. The new company will be an operating company and it will lease the properties of the companies included in the new system. These are the present enlarged New York, Chicago & St. Louis (including the Toledo, St. Louis & Western and Lake Erie & Western) the Chesapeake & Ohio and its subsidiary, the Hocking Valley, acquired by the Van Sweringens early in 1923 but still operated separately, and as entirely new acquisitions into the Van Sweringen group, the Erie and the Pere Marquette.

The new system which it is proposed to establish will, if the plans come to fruition, become one of the important systems of the country. Its size and strategic position will be such as to permit it to take its place in the company of the New York Central, the Pennsylvania and the Baltimore & Ohio systems as one of the four—in place of the present three—leading systems in the eastern region.

There is romance in the rapid manner in which the new system has been brought together. O. P. and M. W. Van Sweringen were newcomers in the railroad field as recently as eight years ago, when, in July, 1916, they purchased from the New York Central that company's controlling stock interest in the New York, Chicago & St. Louis. That line operated but 523 miles of line. Consolidation with other properties began in 1922 with the acquisition of the Toledo, St. Louis & Western and the Lake Erie & Western. It can, therefore, be said with truth—presuming all the while that present plans mature—that in the unbelievably short space of slightly over two years the Van Sweringen system has been increased no less than 18 times in size.

Another factor of greatest importance in connection with the present developments is that they are the most far reaching of any that have yet been proposed to put into effect the consolidation provisions of the Transportation Act. The provisions of that act sanction consolidations and supersede the stigma that attached thereto in the Sherman anti-trust law. Formation of the new Van Sweringen system will have to receive the approval of the Interstate Commerce Commission. Whether the commission will grant such approval is, of course, a question at this time. The system that it is here proposed to form presumably follows in general the lines of thought that have thus far governed the commission in its analysis of this problem. It does not meet the suggestions of the tentative plan of consolidation offered by the commission in August, 1921, but it has generally been understood that the tentative plan was offered merely as a basis or guide to the further consideration of the subject.

History of the Van Sweringen System

The New York, Chicago & St. Louis, operating a line from Buffalo to Chicago 523 miles in length and without branches, was acquired by the Van Sweringens in July, 1916, by the purchase from the New York Central of \$6,240,000 common stock, \$6,275,000 second preferred stock and \$2,503,000 first preferred stock. The price paid was \$8,500,000 of which \$2,000,000 was paid in cash and the remainder in notes secured by pledge of the stock. Prior to that time the company had had a fairly regular dividend record. Five per cent had been paid on the first preferred issue from 1899 to 1913; there were no dividends in 1914 but from 1915 to 1922, the 5 per cent rate was restored. On the second preferred 5 per cent was paid from 1907 to 1913, none in 1914 and 1915, and 5 per cent from 1916 to 1922. No dividends were paid on the common from 1913 to 1918, but this issue was put on a 5 per cent basis in 1919. The property in Van Sweringen hands has been ably operated and dividends have been earned by a satisfactory margin. The road, since its acquisition by the Van Sweringens, has specialized in fast freight service and has been recognized by shippers as especially skillful in maintaining fast schedules between Chicago and the Buffalo gateway.

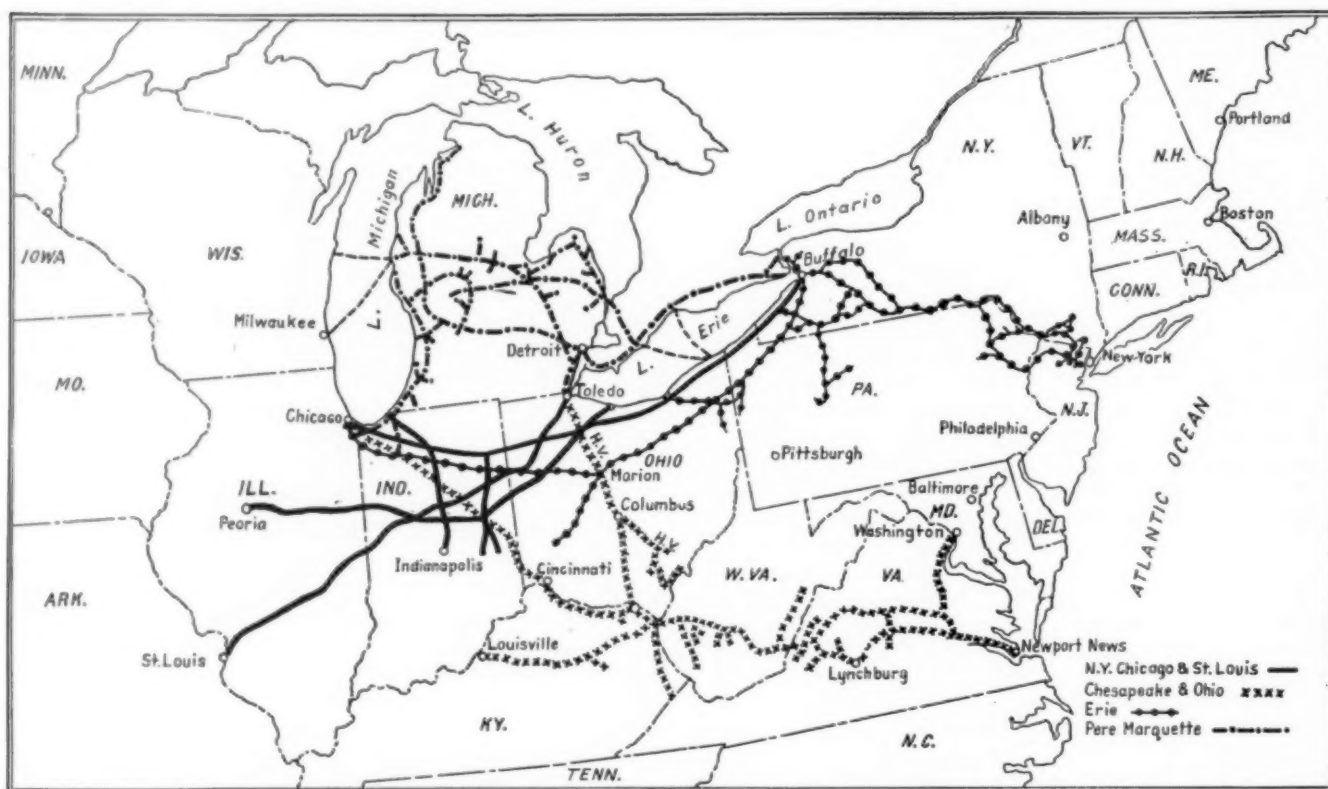
In March, 1922, announcement was made that the New York, Chicago & St. Louis had acquired control of the Toledo, St. Louis & Western, the Clover Leaf. This company was then in receivership. It operated 450 miles of line, like the Nickel Plate, all main track, extending from Toledo, Ohio, to St. Louis, Mo., and crossing the Nickel Plate at Continental, Ohio. Even prior to its acquisition by the Nickel Plate it had been one of the preferred routes to St. Louis on fast freight business, moving principally

through the Buffalo gateway, and was assisted in that respect by the new community of interest with what had already been for some time one of its most important connections.

One month later, on April 26, 1922, the next acquisition of the growing Van Sweringen system was made as a result of an agreement with the New York Central to purchase its majority stock interest in the Lake Erie & Western consisting of 59,300 shares of preferred and 59,400 shares of common stock. Offer was made to purchase holdings of other shareholders. On July 1 a contract was drawn up for joint operations of the Lake Erie & Western and the Nickel Plate providing for operation by the Nickel Plate and a division of the net receipts. The Lake Erie & Western had paid no dividends since 1907. It operated 719 miles of line, including a line from Sandusky, Ohio, to Peoria, Ill., with two lines crossing it at right angles, namely one from Indianapolis, Ind., to Michigan City and the other from

preferred stock and common dividends, also of 6 per cent, were earned twice over.

The Chesapeake & Ohio and the Hocking Valley, 90 per cent of the stock of which the Chesapeake & Ohio owns, were acquired by the Van Sweringens in January, 1923, but have continued to be separately operated. The Chesapeake & Ohio operates 2,558 miles of line and the Hocking Valley an additional 349. Of the Chesapeake & Ohio's revenue tonnage from 70 to 75 per cent is bituminous coal which coal moves partly east to tide-water at Newport News, Va., and partly west, the latter principally moving via Columbus and thence over the Hocking Valley to the lakes at Toledo. The road has been particularly benefited of late because it has the good fortune to serve non-union coal areas in the West Virginia fields. When authority to acquire the property was asked of the Interstate Commerce Commission much was made of the C. & O.'s need for more adequate outlets



The Van Sweringen System as Proposed in the Present Plans

Fort Wayne, Ind., south via New Castle to Rushville and to Connersville. These routes gave the Nickel Plate system as now organized new outlets at Peoria and Michigan City. They gave to the system also feeders serving a busy industrial area and access to fuel supplies which it had not hitherto had.

The present New York, Chicago & St. Louis dates back to July 1, 1923, when the three companies—the Nickel Plate, the Clover Leaf and the Lake Erie & Western—were consolidated into a new company, operating 1,695 miles of line and ably holding its own in the highly competitive territory extending from Buffalo to Chicago, St. Louis and Peoria. Stock of the new company was exchanged for the stock of the original companies. Outstanding stock now consists of \$45,942,800 common and \$32,508,300 cumulative preferred, with ownership certificates, etc., totaling \$78,967,900. On December 31, 1923, funded debt totaled \$86,033,000. In 1923, the company showed net income equivalent to twice its fixed charges. Its net after charges was equivalent to $3\frac{3}{4}$ times the 6 per cent dividends on the

to the west which it was maintained the Nickel Plate connection would furnish. It is to be supposed that the preference for non-union coal evidenced of late—primarily because of its lower price—must have called upon all the facility for outlet to the west that the Nickel Plate connections had to offer.

THE PROPOSED VAN SWERINGEN SYSTEM

New York, Chicago & St. Louis.....	1,695
Chesapeake & Ohio.....	2,558
Hocking Valley.....	349
Erie.....	2,183
Chicago & Erie.....	270
New Jersey & New York.....	46
New York, Susquehanna & Western.....	136
Wilkes-Barre & Eastern.....	87
Bath & Hammondsport.....	9
Pere Marquette.....	2,731
	2,262
	9,595

The price that the Van Sweringens paid for the Chesapeake & Ohio was never officially announced. The stock was purchased from H. E. Huntington and his associates, and it was understood that the purchase covered 30 per cent

of the outstanding common stock and that the price paid was \$80 a share. The Chesapeake & Ohio had outstanding on December 31, 1923, \$65,425,725 common stock and \$12,558,500 preferred and its funded debt in the hands of the public as of that date totaled \$212,316,124. In 1923 the road had net after charges amounting to nearly \$9,000,000. The preferred stock was issued in 1922 and carries a rate of 6½ per cent cumulative. The dividends on the common stock are at the rate of 4 per cent. In 1923, after appropriations for dividends and for other purposes, the Chesapeake & Ohio carried to profit and loss a balance of \$5,000,000.

Exchange of Stock in New Company

As previously noted, the present negotiations call for the organization of a new Nickel Plate Corporation and exchange of stock. Under the proposed plan the bonds of different companies now outstanding would remain outstanding but any new bonds issued would be a mortgage on the physical properties of the entire system which would be guaranteed by each of the individual lessor companies. The new stock will be in two issues, a 6 per cent cumulative preferred and common. It is intended to put the common stock on a 6 per cent basis from the time of issuance. It has been estimated that on the basis of the 1923 earnings, the combined companies would have earned at the rate of 14 per cent on the amount of common stock required to be issued under the plan.

The semi-official announcement made on August 7 said that the plan calls for an exchange of stock on the basis outlined below. More definite information will be available when the letters asking their participation are sent to the stockholders of the various roads involved.

Chesapeake & Ohio, for each \$100 of the 6½ per cent preferred \$115 in the new company's 6 per cent cumulative preferred, equivalent to 6.9 per cent return as against the present 6½ per cent.

For each \$100 of common stock, \$55 in the new 6 per cent preferred and \$55 of new common stock. If the new common receives dividends of 6 per cent as expected, this means a rate of return of 6.6 per cent on \$100 par value in place of the present 4 per cent.

Hocking Valley for each \$100 of present common stock, \$50 in preferred in the new company and \$50 common, thereby giving the stockholders a return of 6 per cent in place of the present 4.

Erie, for each \$100 of the present first and second preferred issues, \$50 in preferred stock of the new company and for each \$100 of present Erie common \$40 in common stock in the new company. The significance of this is that Erie shareholders will finally get the dividends on their stock that they have waited for for many years. In the case of the preferred stock they will receive after their exchange for stock in the new company dividends at the rate of 3 per cent on each \$100 par value of their present stock and on their common dividends equivalent to 2.40 per cent on each \$100 par value.

Pere Marquette, for each \$100 of present prior preference stock, \$100 in the new preferred stock giving shareholders a dividend of 6 per cent in place of the present 5. For each \$100 of preferred stock \$90 in new preferred, giving a return of 5.40 per cent in place of the present 5. For each \$100 of common stock \$85 in the new common stock, giving a return of 5.10 per cent in place of the present 5.

The New York, Chicago & St. Louis is said to own at present about 150,000 shares of Chesapeake & Ohio common which, incidentally, is far from a controlling interest. It is said to own also 120,000 shares of Pere Marquette common. The Chesapeake & Ohio owns 90 per cent of the stock of the Hocking Valley. Cleveland interests allied with the Van Sweringens are said to own an additional 50,000 shares of Pere Marquette and it is understood that the Van Sweringen's hold about 350,000 shares of Erie Common.

With reference to the Nickel Plate holdings and to the disposition of the stock of the present New York, Chicago & St. Louis, the semi-official statement issued on August 7 said:

As to the existing New York, Chicago & St. Louis Railroad, the plan proposes that because of its existing interest in other shares mentioned above the New York, Chicago & St. Louis shall continue as a holding company, having disposed of its fixed property to the new company and retaining in its treasury the shares of stock issuable against such fixed property, together

with the shares of stock applicable to its existing holdings of Chesapeake & Ohio and Pere Marquette as set forth above.

The New York, Chicago & St. Louis is to receive for its physical property an amount of new preferred stock of a par value equivalent to the existing New York, Chicago & St. Louis preferred stock and an amount of common stock equivalent to the existing common stock. Such preferred and common stocks, together with the preferred and common stocks issued against its ownership of Chesapeake & Ohio and Pere Marquette, are to be held for the benefit of the existing preferred stock and common stock of the New York, Chicago & St. Louis Railroad Company. So far as regards the stock of the five companies, other than the present New York, Chicago & St. Louis Railroad Company itself, it is probable that actual deposit of stock will be requested pursuant to the terms of the plan to be mailed to the stockholders.

Erie's Place in the System

When the Van Sweringens were in the earlier stages of bringing together the system as it now stands it was popularly supposed that they were probably working in the interest of one of the trunk lines reaching the port of New York. This supposition was put at rest, however, by a statement made some time since by W. A. Colston, vice-president and general counsel of the New York, Chicago & St. Louis who said that it would be more likely for the Nickel Plate itself to acquire a New York-Buffalo connection rather than for one of the trunk lines to acquire the Nickel Plate. His statement is now borne out by the acquisition by the Van Sweringens of the Erie.

The Erie operates with its subsidiaries (the Chicago & Erie, the New Jersey & New York, the New York, Susquehanna & Western, the Wilkes-Barre & Eastern, etc.) a total of about 2,700 miles of line. The route from New York to Chicago is now double track for most of its length and the route from New York to Buffalo in its entirety. The Erie connects with the Nickel Plate at Buffalo, Chicago, Cleveland, Dunkirk, Kingsland, Ind., Lima, Ohio, Ohio City, Ind., and at Rochester, Ind. It connects with the Hocking Valley at Marion, Ohio.

The feature that will prove of the greatest value to the new system is, of course, the fact that it gives the system an eastern connection and route of its own to New York. The Nickel Plate is at present in the position of having to trade for traffic at the Buffalo gateway. To this there can be no objection at present while the Lackawanna and Lehigh Valley, from which two carriers the Nickel Plate at present receives or to which it at present gives the greater part of its traffic moving through Buffalo, are independent and in an advantageous position to supplement as far as the New York-Buffalo movement is concerned the well regarded fast freight service of the Nickel Plate west of Buffalo. Naturally it is to be supposed that with the tendency towards consolidation, the Lehigh Valley and Lackawanna may not always remain independent and that different factors may rule in the future if these roads become parts of the through routes between New York and the west. Incidentally, and on the other hand, it is interesting to surmise what may be the effect on Lackawanna or Lehigh Valley fortunes of the tendency of one of their most important connections to keep within its own family the New York traffic as will very likely be the case.

Irrespective of these facts, however, the acquisition of the Erie seems a logical extension of the present Van Sweringen system. The Erie has a good line from Chicago and likewise from Buffalo to New York. It is favored in the way of terminal properties, especially at New York where its potentialities from the terminal standpoint promise unusual advantages for the future. The question might arise as to why the Nickel Plate should desire an additional line to Chicago. One surmise is that the Nickel Plate—meaning the original Buffalo-Chicago line—may be primarily used for eastbound fast freight service, the tonnage to be delivered at Buffalo or some other connecting point to the Erie for movement to New York. This surmise further has it that the lines of the Erie west of Buffalo would be available for westbound traffic and especially advantageous from the standpoint of handling a large part of the heavy coal tonnage which originates on the Chesapeake & Ohio and might read-

ily, it is presumed, be delivered via the Hocking Valley to the Erie at Marion. Specialization of the Chicago-Buffalo line of the original Nickel Plate for eastbound tonnage would seem advisable because this line has an extremely heavy traffic density. In 1922, it amounted to no less than \$4,982,866 revenue ton-miles per mile of line making it one of the busiest single track lines in the country. The Erie at present handles an extensive fast freight service. It is very largely eastbound perishable freight from California on which the Erie maintains that it secures divisions that are too small to make the business profitable. The community of interest with the Nickel Plate should give the Erie considerably more remunerative fast freight business than it now handles.

The Pere Marquette

It is not difficult to see the value of the Pere Marquette to the Van Sweringen system. This road of late has become extremely prosperous owing to the industrial growth of the Michigan peninsular. The company operates 2,262 miles of line. It connects with the Nickel Plate through the terminals at Toledo, with the Erie at Chicago and Suspension Bridge. The territory which it serves supplies a large market for industrial fuel and on the other hand the remainder of the Van Sweringen system as proposed in the present plans serves a large market for automobiles. The Pere Marquette is held in many well informed quarters to need more through traffic. The Erie and Nickel Plate connections should make possible increased opportunity for such tonnage.

The Erie and Pere Marquette alike have recently improved their earnings very substantially.

In 1923, the Pere Marquette, succeeded in paying five per cent on all three of its issues of stock besides which in the past three or four years it has caught up on all the arrearages in its preferred dividends. Net corporate income, or net after charges in 1923 totaled \$5,202,810, dividends being earned approximately twice over. A ready measure of recent Pere Marquette good fortune is comparison of net railway operating income in 1923 with the standard return for operations during federal control which was the average net railway operating income for the three years ended June 30, 1917. The standard return for the property was \$3,748,196. Net railway operating income for 1923 totaled \$7,086,372. In 1922 it was \$6,081,196. For the first six months of 1924, it was \$2,509,107.

The Erie, of course, pays no dividends. In 1923, it had a surplus after charges of no less than \$8,435,273 or a balance after appropriations for sinking funds of \$7,218,208. These figures apply to the Erie itself which operates 2,309 miles of the system's total mileage of 2,731 miles. Net railway operating income in 1923 totaled \$18,320,413. The

standard return for the property was \$15,729,068. The year 1923 was exceptional and showed a remarkable improvement over preceding years. In 1922, net railway operating income was only \$644,910. For the first six months of 1924 net railway operating income totaled \$7,166,893, comparing with \$7,979,719 in the first half of 1923, so it will be seen that the 1923 improvement in earnings is being continued with rather fair success into this year in spite of the general falling off in traffic.

I. C. C. Consolidation Plans

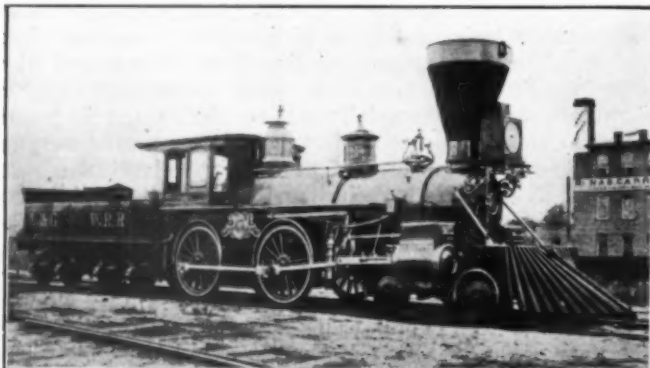
The roads that the present plans of the Van Sweringens propose to unite into one system were not placed in one system in the Interstate Commerce Commission tentative plan of consolidation offered for discussion in August, 1921. In the I. C. C. tentative plan the several roads that it is proposed to put in the presently planned Van Sweringen system will be found divided among no less than four of the groupings.

The New York, Chicago & St. Louis, the Toledo, St. Louis & Western and the Lake Erie & Western were placed together in System No. 5—the Nickel Plate-Lehigh Valley system. As indicated in the system's title the New York connection was designated to be the Lehigh Valley. In System 5 also were placed the Detroit & Toledo Shore Line (in which, by the way, the Nickel Plate or rather the Clover Leaf has a half interest with the Grand Trunk), the Wheeling & Lake Erie, the Pittsburgh & West Virginia and the Bessemer & Lake Erie. Recent rumors had it that the Van Sweringens had made overtures to the present owners of the Wheeling & Lake Erie and the Pittsburgh & West Virginia with the view to securing an entrance for the system into the Pittsburgh district.

The Pere Marquette was placed in the tentative consolidation plan in System No. 6, the Pere Marquette System. This was intended as a regional grouping including certain of the roads in Michigan. Besides the Pere Marquette there were included the Detroit & Mackinac, the Ann Arbor, the Detroit, Toledo & Ironton and the Boyne City, Gaylord & Alpena.

The Chesapeake & Ohio was placed in System No. 8, the Chesapeake & Ohio System. Included with the Chesapeake & Ohio was its subsidiary the Hocking Valley and also the Virginian.

The Erie was placed in System No. 4 which was offered with certain alternative suggestions. Included with the Erie were the Lackawanna, the Delaware & Hudson, the Ulster & Delaware, the Bessemer & Lake Erie (also suggested for inclusion in System No. 5), the Buffalo & Susquehanna, the Pittsburg & Shawmut, the Pittsburg, Shawmut & Northern, the Lorain, Ashland & Southern and the Wabash lines east of the Missouri river.



A Product of the New Jersey Locomotive & Machine Works
Built for the Atlantic & Great Western



A Delaware, Lackawanna & Western Locomotive of the
Early Days

General News Department

The Sandusky, Ohio, coal dumping dock of the Pennsylvania broke all previous records in July when 682,355 tons of coal were transferred from the cars to lake Erie coal barges. This is also a record for all lake ports, with the exception of Ashtabula, which dumped 726,804 tons of coal in June, 1921.

The attorney general, in reply to an inquiry from the secretary of the interior, has ruled that the law does not permit the interchange of passes between the Alaska government railroad and common carriers within the continental United States, because the government railroad is not subject to the interstate commerce law.

The pilot trucks of all five of the locomotives of the Alberta & Great Waterways, a Canadian road, have been equipped with steam pipes which eject steam under pressure to clear the rails of caterpillars. The swarms of caterpillars had crossed the tracks in such numbers that, when crushed, they made the rails slippery, rendering the operation of trains unsafe and at times impossible.

A cumulative index-digest of decisions of the United States Railroad Labor Board issued before July 1, 1923, has been published by the government printing office at Washington. The volume includes all regulations of the Railroad Labor Board, court and administrative decisions, and regulations of the Interstate Commerce Commission in respect to Title III of the Transportation Act, 1920.

Car Foremen's Meeting

After the summer recess, the initial fall meeting of the Car Foremen's Association of Chicago will be held in the Great Northern hotel, Chicago, on Monday evening, September 8. The meeting will begin promptly at 8 o'clock and will be addressed by E. Von Bergen, air brake and lubricating engineer of the Illinois Central, who will talk on the subject of hot boxes.

Southern Pacific Breaks Operating Records

During each successive month of the first half of this year, the Southern Pacific set new records for operating efficiency. New high records for gross tons per train and gross tons per locomotive were established each month, the high records for June being 1,853 gross tons per train as compared with the record of 1,630 tons made last January and 1,428 gross tons per locomotive compared with 1,238 tons in January. Net tons per train increased in the same manner, new records being set in January, February, April, May and June. In June, net tons per train were 736 tons. Records for gross ton miles per train hour were broken in March, April, May and June. In June this figure reached 20,877, compared with 18,981 in June, 1923. A new record car load of 29.1 tons was established in May and a record of 48.3 cars per average train was set in June.

Locomotive Utilization Sub-Committee

The American Railway Association's Committee on Utilization of Locomotives, the personnel of which was announced on page 1430 of the June 12 issue of the *Railway Age*, has appointed a sub-committee which is now actively engaged in perfecting the details of a plan for the year's work. The members of this sub-committee are as follows: J. H. Connor, special representative to the superintendent of motive power, Union Pacific; J. W. McIlveigh, general road foreman of engines, Missouri Pacific; G. E. Parks, mechanical engineer, Michigan Central; O. P. Reese, assistant general superintendent of motive power, Pennsylvania; W. S. Cooper, assistant to the general manager, Chicago, Milwaukee & St. Paul; G. W. Armstrong, special representative, mechanical department, Erie; Henry Gardner, special engineer to the chief of motive power, Baltimore & Ohio; J. M. Nicholson, fuel conservation engineer, Atchison, Topeka & Santa Fe; W. W.

Young, master mechanic, Southern Pacific; C. E. Brooks, chief of motive power, Canadian National; F. J. Byington, assistant general superintendent, Chicago & North Western. It will be noted that, as in the case of the main committee, the sub-committee membership is divided between operating and mechanical men, although not evenly.

"The Public Is Always Right"

An advertisement, headed with this title, appeared in local Mississippi newspapers the last week in July signed by L. E. Faulkner, general manager of the Mississippi Central, and expressing the belief that the policy suggested by this title ought to make friends for the railroad; and pledging the best efforts of the company to carry it out. Following is a copy of the advertisement, reduced in size:

"THE PUBLIC IS ALWAYS RIGHT"

The above statement, of course, is not literally true, but it is a fact that in the final analysis public opinion is usually right.

Several years ago many of the large business industries of the United States adopted the policy, "The Public Is Always Right," and this policy has proved to be a wise one. It is a policy of friendliness, designed to increase efficiency through goodwill, and a soft answer at every turn.

In so far as the reins of regulation, which are held by the public, that so largely guide the railroad policies, will permit, our policy is "The Public Is Always Right." We believe that such a policy will make friends for our railroad, thereby increasing the sympathetic support of the public, without which we cannot hope to succeed.

We believe that the public whom we serve, not only have the right to criticize our services, but that it is their duty to help us improve our service by constructive criticisms and suggestions. Often the public withhold just criticisms, feeling that such criticisms will not be properly received by the railroad employees, and this, too many times, is the case.

We invite your constructive criticisms and suggestions; we want you to feel free to call our attention to every instance, no matter how small, where we fail to function 100 per cent.

L. E. FAULKNER, General Manager,
Mississippi Central Railroad Company.

Attempt to Make Moving of

C. N. R. Terminal a Political Issue

Proposed removal by the Canadian National of the divisional headquarters from Mont Joli, Quebec, to Campbellton, N. B., is being made an issue in the federal by-election campaign in the constituency of Rimouski in which Mont Joli is situated. The order for the removal was made some time ago, but it has yet to be carried out. An interesting statement in connection with this question of transfer of divisional headquarters was made last Saturday by George P. Graham, Minister of Railways and Canals, at Ottawa.

"I have read several dispatches evidently emanating from Montreal," said Mr. Graham, "intimating that this headquarters question was being made an issue in the Rimouski campaign. The Conservative workers have assured the employees of the Canadian National at Mont Joli that if their candidate were elected (on September 1 next) he would see that the Canadian National did not interfere with the residence of the men. This is not a new question but a very old one, and many months ago in the last session of the Dominion Parliament an influential deputation, accompanied by J. A. D'Anjou, then Liberal member for the riding of Rimouski, appeared before me and placed in a fair way their case. The leaders made a splendid case, and I have no hesitation in saying that the human touch they gave to their story made a deep impression upon my mind. Those men declared that the removal of a large number of them who have been in Mont Joli for many years and whose dead are buried there would work

almost irreparable injury to the church which had been erected there at considerable sacrifice, would impair the efficiency of their schools, and make the burden of taxation upon the few who remained almost unbearable. In addition I was authorized to tell the Canadian National board that the men were willing to forego any part of their income from the Canadian National by which part it was made more expensive to operate headquarters at Mont Joli than at Campbellton.

"The removal of divisional headquarters or terminals has always been regarded by Parliament as a serious step, and it will be recalled that a few years ago, at the request of the late Frank Cochrane, then Minister of Railways and Canals, assisted by myself, Parliament passed an act making it incumbent upon the railway companies, when they thought it necessary to remove terminals, to reimburse the employees who might suffer financially, in one form or another, by such removal. For many years I fought the old Grand Trunk Railway both when I was in Parliament and when out of it, on this question, and my sympathies have always been with the men unless some convincing argument could be adduced as to the necessity for removal."

Safety Congress in Louisville

The Thirteenth Annual Safety Congress of the National Safety Council will be held in Louisville, Ky., from September 29 to October 3.

The program of the Steam Railroad Section is as follows:

SEPTEMBER 30

1. Better Management Through Co-operation, by Henry Bruère, Third Vice-President, Metropolitan Life Insurance Company.
2. Report of Officers.
3. Development of Safety on the Railroads, by Charles Frederick Carter, New York Central.
4. Reports of Committees.
5. Safety and Fire Prevention.

OCTOBER 1

Election of Officers.

Safety from the Standpoint of:

1. The Transportation Department, by E. G. Neumann, Union Pacific.
2. The Car Department, by W. A. Clark, General Car Foreman, Duluth, Missabe & Northern.
3. The Track Department.
4. The Locomotive Engineer, by D. J. Buckley, Locomotive Engineer, Baltimore & Ohio.
5. The Shopman.
6. The Conductor.
7. The Trainman, by F. G. Kileen, General Chairman, Wabash, Brotherhood of Railroad Trainmen.

SAFETY INSPECTORS' SESSION—OCTOBER 2

1. Presentation of Inspector's Problems, by J. A. McNally, Safety Inspector, Wabash.
2. Organizing and Maintaining Interest Among Committeemen, by H. Corbin, Supervisor of Safety, Atlantic Coast Line.
3. Acquiring a Safety Conscience, by W. L. Allison, Baltimore & Ohio.
4. Getting Co-operation of Local Safety Committeemen, Local Officers and Labor Representatives, by D. E. Satterfield, Safety Inspector, Chesapeake & Ohio.
5. Interesting the Individual in Safety Work, by J. A. Clancy, Safety Representative, New York, New Haven & Hartford.
6. General Discussion.

Freight Rate Question to

Come Up in Canada in September

With the approach of the opening on September 17 before the Dominion Railway Board of the hearing of complaints against the discrimination caused by the restoration to full effect of the Crow's Nest Pass Agreement and with the growing perplexity of the Canadian freight rate question there will be no avoidable delay on the part of the Dominion government to fill the vacancy on the Railway Board caused by the death of its chairman, Frank B. Carvell, according to a statement last week by George P. Graham, Minister of Railways and Canals.

"There never was a time," said Mr. Graham, "when the freight rates question was as perplexing as it is today. The situation of the railways, while not critical, will have to be given full consideration by the Dominion Railway Board in dealing with the problems that are certain to come before it in the next few months. Canadian railways, it must be remembered, give cheaper rates for export products than do the railways in the United States.

Also, it should be borne in mind that the Canadian railways carry through freight in competition with the United States roads, and the latter get their soft coal free of duty, while the Canadian roads have to pay a duty of 50 cents a ton on bituminous coal.

"Lighter crops in Western Canada will result in greatly reduced tonnage, which will probably reach its fullest effect earlier next year. When there is an abundant crop, as in 1923, millions of bushels are stored to be moved by the railways early in the next year. That is not likely to be the case this year; first, because production is decreased, and, second, because the farmers will be anxious to take advantage of the increased price as soon as possible. I do not want to be pessimistic, but the railway situation is far from encouraging, as I see it. The duty of the Dominion Railway Board, while at all times very serious and important, will be increasingly so in the ensuing months."

So many protests have been received by the Railway Board regarding discrimination resulting from the full application of the Crow's Nest Pass freight rates that it is possible some remedial legislation will be introduced by the federal government at the next session of Parliament. This discrimination has arisen from the insistence of the railways on a literal interpretation of the agreement of 1897 which provided reduced rates on certain commodities from points on the then existing lines of the Canadian Pacific. As a result cities and towns not on the C. P. R. at that time cannot enjoy the rate reduction in effect for their neighboring towns and cities. Such centres in Western Ontario as Brantford and Guelph complain bitterly about such discrimination. It also is felt in Alberta and in British Columbia, where the pact never applied. The protests of these various bodies will be heard by the Railway Board in September, and the Board is likely to give an early decision to permit of an appeal to the Supreme Court of Canada, and whatever is the final legal decision in the matter some form of remedial legislation is looked for in Parliament early in 1925.

Colorado Goes to Court Over

Branch Line Abandonment

The dispute over the abandonment of the Colorado & Southern branch line from Buena Vista, Colo., to Romley, for which permission was granted by the Interstate Commerce Commission and which the state of Colorado protested, will be taken to the Supreme Court. Ruling on the plea of the state that the Interstate Commerce Commission was without jurisdiction, inasmuch as the road was an intrastate and not an interstate line, a special court of three federal judges dismissed the application on the ground that the court lacked equity in the case, being unable to decide whether the loss of money on the branch line of the railroad properly constituted a burden on interstate commerce. The state of Colorado gave notice that an appeal to the Supreme Court of the United States will be made immediately.

Iowa Railroad Assessments Held Excessive

An opinion that the State of Iowa has shown "unlawful discrimination" in assessing the property of the Chicago, Rock Island & Pacific and the Chicago Great Western in that state has been delivered by Scott M. Ladd, a special master in chancery of the Iowa federal court. The decision ordered that the Rock Island assessment be reduced a total of \$4,812,875 or \$2,185 a mile, and that of the Great Western a total of \$3,548,098 or \$4,496 a mile. The reduction applies to the years 1922 and 1923 and will reduce the taxes of the two roads more than \$500,000 each year. In the case of the Great Western, the reduction approximates 16 per cent and in that of the Rock Island, 7 per cent. Although this order is not final and is subject to the approval of the federal court, it is believed the court will follow the usual procedure and approve the special master's ruling. The State of Iowa is expected to file immediately in the federal court a bill of exceptions based on the plea that Judge Ladd's opinion is founded on "erroneous grounds." If this bill is dismissed, an appeal will be made to the United States Supreme Court.

The Ladd decision declared that "there is no escape from the conclusion that the Iowa executive council has acted, in the matter of adjusting values of property in the several counties and in assessing railroad properties, in open and systematic violation of the assessment statutes of the state."

Traffic News

The Spokane, Portland & Seattle will soon begin the operation of motor buses from Portland, Ore., to Mt. Rainier.

An illustrated booklet describing the new Oriental Limited has been published by the Great Northern. The illustrated cover of the 28-page pamphlet shows the new train in the western mountains.

Fifty ticket agents and traveling passenger representatives of the Chicago, Burlington & Quincy left Chicago on August 25 on a special tour through the national parks and other vacation spots of the west. The trip was planned by the Burlington to acquaint its representatives personally with the places to which they urge their patrons to go.

The petition of the railroads operating in the southern Illinois coal fields adjacent to St. Louis, Mo., to postpone the order of the Illinois Commerce Commission requiring lower freight rates on coal shipments to East St. Louis, Ill., has been denied by the Circuit Court at Belleville, Ill. An appeal will be carried to the Illinois Supreme Court.

The eighth bi-monthly meeting of the Great Lakes Regional Advisory Board was held in Detroit, Mich., on August 25 and was attended by 400 railroad and shippers' representatives. Reports of the commodity committees of the board showed a slight improvement in business conditions in the last 30 days and predictions were made of much greater improvement in all business in the Great Lakes territory in the immediate future. It was decided that the railroads should increase their efforts to obtain more box cars 40 ft. long and 10 ft. high to meet the requirements of auto body and furniture manufacturers. A resolution was also passed urging the roads to stop the closing of end doors on auto box car equipment as has been the custom recently. It was declared that the end door type of auto car is necessary for certain automobile shippers due to the size of their products. The next meeting of the board will be held at Buffalo, N. Y., on October 14.

Surcharge Hearing Reopened

The Interstate Commerce Commission reopened its hearing on the petition for the removal of the surcharge on Pullman sleeping car fares at St. Paul, Minn., on August 25. Commissioner J. B. Campbell and Examiner J. B. Keeler, representing the Interstate Commerce Commission, heard testimony that the railroads annually save \$50,000,000 by the use of Pullman cars on their lines because they have no investment nor upkeep cost yet receive both regular fares and surcharge on passengers using Pullmans. D. K. Clink, president of the International Federation of Commercial Travelers; L. S. Taylor, vice-president and comptroller of the Pullman Company; J. F. Lane, chief statistician of the Pullman Company, and L. E. Bevington, chairman of the Transcontinental Passenger Association, were witnesses at the hearing.

Silk Trains Break Speed Record

Two silk trains, which were hauled from Seattle, Wash., to New York recently by the Great Northern, the Chicago, Burlington & Quincy and the New York Central, broke all speed records of silk trains for the transcontinental journey. The first train, consisting of 10 cars of silk in special refrigerator cars and a coach for the trainmen, left Seattle on August 13, and reached St. Paul, Minn., in 39 hours and 27 minutes. It was then transferred to the Burlington and reached Chicago in 9 hours and 29 minutes. The train was routed to New York from Chicago over the New York Central and completed its trip across the continent in 75 hours. The second train was even faster. It left Seattle with 9 cars of silk on August 14, arrived in St. Paul 38 hours and 45 minutes later, breaking all records for fast operation on the Great Northern. It was handled by the Burlington from St. Paul to Chicago in 9 hours and 20 minutes and completed the race to New York in a total elapsed time of 73 hours and 14 minutes. This speed is 8 hours faster than any previous silk train has made the coast to coast journey.

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has issued revised instructions to carriers in relation to the issuance of securities, outlining the information to be furnished and the forms to be used in making applications for authority to issue securities under section 20a of the interstate commerce act. They supersede previous instructions issued on May 25, 1922.

Court News

Contractor's Employee Negligent in Crossing a Bridge

The Circuit Court of Appeals, Third Circuit, holds that an employee of an independent contractor engaged in the electrification of a railroad, who tried to cross a one-track bridge to reach the contractor's tool yard, knowing that a train was standing near the other end of the bridge, without notifying the trainmen of his presence, and who was knocked off the bridge by the train and injured, was contributorily negligent as a matter of law.—*Pennsylvania v. Burgerson*, 296 Fed. 310.

Persons Using Station Premises

Cannot Rely on Crossing Signal

The Mississippi Supreme Court holds that where a person is struck and injured by a locomotive in front of a station building and not at a street crossing, failure to sound the whistle or ring the bell for a street crossing in accordance with Miss. Code §4045 cannot be invoked by the plaintiff. This section is only applicable where the injury occurs on a crossing.—*Yazoo & M. V. v. Cox* (Miss.) 97 So. 7.

Defective Coupler Not Proximate Cause of Injury

The New York Appellate Division holds that the existence of a defective coupler, to be a basis for either negligence or a violation of the Safety Appliance Act, must be a proximate cause of the injury; and where a collision of moving cars against the car which struck plaintiff was unintended, and no part of the operation required the presence of a coupler, evidence as to a defective coupler on the car should have been excluded.—*Hodgert v. D. L. & W.*, 202 N. Y. Supp. 793.

Pass Condition Exempting from Liability Valid

The Virginia Supreme Court of Appeals holds that the fact that a passenger on an interstate pass from a point in South Carolina to a point in Virginia stopped off at a point in Virginia where she was injured while boarding a train, did not change the character of her journey from interstate to intrastate; and the condition of the pass exempting the carrier from liability for negligent injury to the passenger was valid and binding.—*Williamson v. Seaboard Air Line* (Va.) 118 S. E. 255.

Rates Can Be Changed by Commission by Order

Only—Right to Reparation Must Be Given

The Circuit Court of Appeals, Eighth Circuit, holds that a report and opinion of the Interstate Commerce Commission does not annul or change an existing tariff rate. Section 15 of the Interstate Commerce Act provides that any change of rates by the commission shall be made, not by a report, finding, or opinion, but by an order to the carrier to cease from collecting the rate, to take effect not less than 30 days after the date of the order. And reparation will not be awarded by the courts for the exaction of unreasonable rates except where an allowance of reparation has been previously made by the commission in that or a similar case involving the same question.—*Chicago, B. & Q. v. Merriam & Millard Co.*, 297 Fed. 1.

P. S. C. Cannot Fix Preferential Rates

The Alabama Supreme Court holds the Public Service Commission, although it could, after the period of federal control, under authority of section 208a of the federal Transportation Act, abolish preferential 'assembling rates' altogether, it could not, without agreement by carriers as well as shippers, set up other rates, not general but applicable only to furnace raw material traffic, in view of section 13 of the Alabama Transportation Act of 1920.—*Southern v. Alabama P. S. C.* (Ala.) 97 So. 289.

State Legislation Abrogating

Intrastate Freight Rate Contract

The federal district court for western Washington holds that a shipper of lumber is not entitled to damages for the failure of a railroad company to carry out its contract to carry logs at a specified intrastate rate where subsequent state legislation has rendered the contract illegal. The fact that the contract was made before the admission of the state would not protect it from state legislation.—*St. Paul & Tacoma Lumber Co. v. Northern Pacific*, 296 Fed. 749.

Recovery of Erroneous Assessment

for Street Improvements

A railroad company sued a city to recover the amount of a street improvement assessment paid by it denying liability for assessment for improvements on the whole block, but admitting liability for improvement of street intersections. The California Supreme Court holds that the railroad could not recover without alleging the specific amount for which it denied liability or giving data from which that could be determined.—*Southern Pacific v. City of Madera* (Cal.), 219 Pac. 1011.

Defective Crossing Signals May Make

Res Ipsa Loquitur Rule Applicable

The Connecticut Supreme Court of Errors holds, in a crossing accident case, that where a signal was defective in that it was liable at times not to operate promptly, that, where there was little, if any, evidence, of any inspection to discover the defect, that it could not fail to give warning if properly maintained, and that its defective condition was not due to any act of the plaintiffs, such conditions would justify an application of the doctrine of *res ipsa loquitur*, which would require to be rebutted by the railroad company.—*Hunt v. Central Vermont* (Conn.) 122 Atl. 563.

Liability on Prepaid Consignment

Before Actual Payment of Freight

Although under the regulations of the Interstate Commerce Commission freight rates are required to be collected on a prepaid consignment before the shipment is forwarded, the North Carolina Supreme Court holds that where the railroad agent accepts the shipment for forwarding, and before the money is actually paid over to him the goods are burned, the railroad is liable as a carrier and not as a warehouseman. If prepayment had been demanded and refused, the goods would have been in the railroad's hands simply as a warehouseman.—*Howell v. Seaboard Air Line*, 186 N. Car. 238, 119 S. E. 198.

Safety Appliance Act—Locomotive

in Roundhouse for Repairs

The Circuit Court of Appeals, Sixth Circuit, holds that the Safety Appliance Act, §2, is applicable to all vehicles used on any interstate railroad, whether they are engaged in interstate commerce or not. The test of liability under this act is not to be confused with that under the federal Employers' Liability Act, where the statutory test is whether the employee is at the time engaged in interstate commerce. He is deemed to be so employed if he is working upon an "instrumentality of interstate commerce"; and a car or engine is sometimes deemed to continue to be such instrumentality, even though it is not at the present time active therein. In actions under the Safety Appliance Act the statutory criterion is whether the car is "in use" "on its line." It is there-

fore held that a locomotive which is at rest at a repair point after the hauling to that point has stopped is not within the act. The accident in this case happened to a machinist who fell from the engine while it was in the roundhouse by slipping on some oil which had been left on the running board after the engine had been sprayed.—*Baltimore & Ohio v. Hoover*, 297 Fed. 919.

Rights of Way Not Taxable as Special Franchises

The New York Appellate Division holds that a railroad right of way acquired from private sources, although crossed by a subsequent laid out street, does not constitute a special franchise, because the right to cross the street is not derived from public authority.—*People ex rel. L. V. v. State Tax Commission*, 206 App. Div. 549, 202 N. Y. Supp. 310.

The same court holds that a railroad's right to construct bridges and embankments over a bay and run its trains thereon under a state grant is not taxable as a special franchise.—*People ex rel. N. Y. Central v. State Tax Commission*, 206 App. Div. 561, 202 N. Y. Supp. 319.

Obligation of Carrier as to Notice

After Conclusion of Transportation

Where the owner, shipping goods in interstate commerce, consigns the goods, not to himself, but to his order with directions to "notify P. Company," the terminal carrier is authorized to consider such company as the consignee, and to give to it, as consignee, all the notices required in the absence of notice that the consignee has been changed. No duty rests on the terminal carrier to notify the consignor that it holds the goods as warehouseman after the free time has expired, where the consignee has not refused to accept until after the goods have been stored.—*Jennings Automatic Dump Body v. Virginian Ry.* (Va.) 119 S. E. 147.

Brakeman Not Entitled to Warning of Engine

Approaching Pursuant to His Own Signal

A brakeman, during a switching operation, opened the switches between two parallel tracks for the engine, gave the engineer a signal to back and then turned and walked between the tracks until the engine struck him, according to the evidence of the engineer and two brakemen. He testified that he gave a stop signal. On appeal from judgment for plaintiff the Circuit Court of Appeals, Second Circuit, held that it was reversible error to refuse a requested instruction that plaintiff could not recover if he gave the signal to back.—*N. Y. O. & W. v. Oles*, 296 Fed. 474.

Sale of Perishable Goods

on Failure to Locate Consignee

The Maryland Court of Appeals holds that the rule, sometimes referred to as the New Hampshire rule, requiring notice to the consignee on the arrival of goods to relieve the carrier of liability as such, in contradistinction to the Massachusetts rule, which does not require such notice before the carrier's duty changes to that of warehouseman, requires no more than the exercise of reasonable diligence in locating the consignee. Whether a carrier will be justified in selling perishable goods, such as watermelons, to prevent further loss, on failure to find the owner and receive his instructions, is held to be a question for the jury under proper instructions by the court.—*Payne v. Roe* (Md.) 122 Atl. 322.

Safety Appliance Act—Railroad's

Duty Not Affected By Strike

The federal district court for northern Georgia holds that the impossibility of inspection and repair of cars owing to a strike and state of violence approaching war is no defense to an action for penalties incurred in using cars with defective safety appliances, the duty imposed by the act being an absolute one. Whatever the cause that prevents the making of repairs, the carrier must cease to use the cars, though its trains stop, or must suffer the consequences fixed by law. If under the unusual circumstances the penalties incurred by the letter of the law ought not to be exacted, the executive probably has the power to remit them under the provisions of U. S. Revised Statutes, §5292. The carrier must seek a remedy there.—*U. S. v. Western & Atlantic*, 297 Fed. 482.

Foreign Railway News

German Railway Technical Exhibition

The illustration shows a poster used in advertising the exhibition to be held in connection with the railway technical congress arranged for by the Society of German Engineers to take place in Berlin in September. A translation of the text follows, in part:

Railway Technical Exhibition—from September 21 to October 5, in Berlin-Seddin. Arranged by the Society of German Engineers in Close Association with the German State Railway. It is purposed in addition to the railway technical congress scheduled to take place in Berlin from September 22 to 27 to present an exhaustive survey of the present state of railway operation. Exhibition and introduction of more than 100 different locomotives of the most modern construction, rail motor cars for standard and



narrow gage railways, special demonstrations; particularly cars for specific lading, cars for passenger and freight transportation, signal and switching equipment, brake equipment, special machine tools. At the same time an additional exhibition will be held at the Berlin-Charlottenburg Technical Institute, where models, sketches and illustrations in the field of railway and transport organization will be shown. The official organ of the congress and the exhibition is the Journal of the Society of German Engineers.

THE ASSESSMENT of the Missouri & North Arkansas Railroad has been reduced by \$200,000 by the Arkansas Railroad Commission. The company's assessment, prior to the reduction, was approximately \$1,000,000.

Equipment and Supplies

Locomotives

THE DETROIT TERMINAL is inquiring for 2, 0-8-0 switching type locomotives.

THE PAULISTA DE ESTRADOS DE FERRO, Brazil, has ordered 4 Mikado type locomotives from the Baldwin Locomotive Works.

THE PACIFIC GAS & ELECTRIC Co., San Francisco, Cal., has ordered one, 70-ton Shay, geared locomotive, from the Lima Locomotive Works.

THE NORTHERN PACIFIC TERMINAL, reported in the *Railway Age* of August 23 as inquiring for 1, 6-wheel switching type locomotive, has ordered 1 locomotive from the American Locomotive Company.

Freight Cars

THE NORTHERN PACIFIC is inquiring for 15 underframes.

THE PERE MARQUETTE is inquiring for 34 caboose underframes.

THE H. J. HEINZ COMPANY is inquiring for 10 flat cars of 40 tons' capacity.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE is inquiring for 25 underframes.

SWIFT & COMPANY has bought 200 underframes from the Western Steel Car & Foundry Co.

THE FRUIT GROWERS EXPRESS has ordered 400 underframes from the Ryan Car Company.

THE ATCHISON, TOPEKA & SANTA FE is expected to come into the market soon for 5,000 cars.

THE GENERAL SUGAR COMPANY, Havana, Cuba, has ordered 65 cane cars from the Magor Car Corporation.

THE CHESAPEAKE & OHIO has ordered 987, 70-ton hopper bottom gondola car bodies from the American Car & Foundry Co.

THE PENNSYLVANIA is inquiring for 1,000 box cars of 50 tons' capacity and 1,000 automobile box cars of 50 tons' capacity.

THE UNITED STATES RUBBER COMPANY has ordered 10 tank cars of 8,000 gal. capacity from the American Car & Foundry Co.

THE BARNSDALL REFINING COMPANY, Tulsa, Okla., has ordered 50 tank cars of 8,000 gal. capacity from the Pennsylvania Car Company.

THE ST. LOUIS-SOUTHWESTERN is inquiring for 1,000 box cars instead of 1,000 stock cars as reported in the *Railway Age* of August 23.

THE NEW YORK, ONTARIO & WESTERN, reported in the *Railway Age* of August 2 as inquiring for 6 steel underframes for caboose cars, has ordered 4 underframes from the Magor Car Corporation.

Passenger Cars

THE GULF COAST LINES are inquiring for 2 dining cars.

THE LEHIGH VALLEY is inquiring for 5 passenger coaches.

THE CHICAGO RAPID TRANSIT is inquiring for 100 steel motor cars, 48 ft. long, for elevated road service.

THE BALTIMORE & OHIO, reported in the *Railway Age* of May 24 as inquiring for 80 electric motor cars for its Staten Island Lines, has ordered this equipment from the Standard Steel Car Company.

THE ILLINOIS CENTRAL, reported in the *Railway Age* of May 10 as contemplating the purchase of 200 suburban cars, expects to buy 215 all-steel coaches for electric service and 70 all-steel coaches for steam service.

Iron and Steel

THE GULF COAST LINES are inquiring for 5,000 tons of rail.

THE ILLINOIS CENTRAL will soon be in the market for approximately 60,000 tons of rail.

THE TEXAS & PACIFIC has placed an order for 10,000 tons of rail with the United States Steel Corporation.

THE SOUTHERN has ordered 700 tons of structural steel for bridges from the McClintic-Marshall Company.

THE NEW YORK CENTRAL has purchased 600 tons of structural steel for a bridge from the McClintic-Marshall Company.

THE CHESAPEAKE & OHIO has ordered 5,000 tons of rail from the Inland Steel Company and an equal amount from the Illinois Steel Company for immediate delivery.

THE ATCHISON, TOPEKA & SANTA FE, reported in the *Railway Age* of August 23 as inquiring for 250 tons of structural steel for an ice plant at Winslow, Ariz., has placed this order with the Union Iron Works, San Francisco, Cal.

Miscellaneous

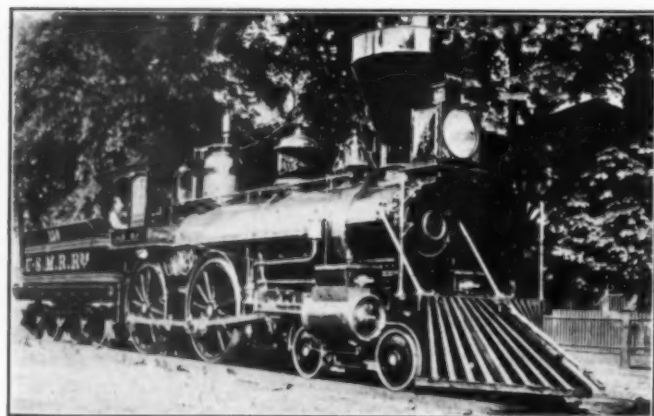
THE CHESAPEAKE & OHIO will build a wooden car float at Newport News, Va., to cost \$47,450.

Signaling

THE PENNSYLVANIA has ordered style S8 electric units for application to the existing mechanical interlocking at OB tower, Mahantage, Pa. These units are being furnished by the Union Switch & Signal Company and will be installed by the railroad company's forces.

THE PENNSYLVANIA has ordered style S8 electric units for applying to the S. & F. mechanical machines in service at CF tower, West of Clark's Ferry, Pa., and at J tower, Meadows Crossing, N. J., from the Union Switch & Signal Company; the installation will be performed by the railroad company's forces.

THE NEW YORK CENTRAL has ordered twelve style S8 electric lever units for application to its Saxby & Farmer mechanical interlocking machine at Painesville, Ohio. The electric section of this machine will have ten working levers and two spare spaces. This machine is being furnished by the Union Switch & Signal Company and will be installed by the railroad company's forces.



A U. S. Army Locomotive of Civil War Days

Supply Trade News

T. E. Murphy, assistant manager of industrial sales of **Pratt & Lambert, Inc.**, Buffalo, N. Y., has been appointed manager of industrial sales.

E. T. Wade, dealer in railway supplies, Richmond, Va., has been appointed representative for the **Chicago Bearing Metal Company**, Chicago.

A steam jet ash conveyer has been purchased by the Wabash from the **Conveyors' Corporation of America**, Chicago, for installation in its Decatur, Ill., power plant.

Theodore B. Counselman has been appointed western representative of the **Clark Car Company**, Pittsburgh, Pa., with headquarters at 122 South Michigan avenue, Chicago.

A. C. Irwin, engineer of the structural bureau of the **Portland Cement Association**, has been appointed manager of the railway bureau, with headquarters at Chicago, succeeding **D. A. Tomlinson**, who died on August 7.

Raynard F. Bohman is now general traffic manager of the **Heywood-Wakefield Company**, Boston, Mass. Mr. Bohman was formerly traffic manager of the **Lloyd Manufacturing Company**, Menominee, Mich., a subsidiary of the Heywood-Wakefield Company.

The **Appleton Train Control Company**, 108 South LaSalle street, Chicago, has been incorporated with a capital of \$20,000. **Russell V. Appleton**, **Arch Welty** and **William C. Ratner** are the incorporators. The company will manufacture and sell train control apparatus.

F. J. DeLima has been appointed agent of the **Gibb Instrument Company**, Bay City, Mich., for the sale of this company's line of electric welding and electric heating machines in the Dominion of Canada. Mr. DeLima's headquarters are in the Keefer building, Montreal, Quebec.

L. G. Coleman, assistant general manager of the Boston & Maine, has resigned to become manager of the locomotive department of the **Ingersoll-Rand Company**, New York. This department was organized to handle the oil electric locomotive. **W. L. Garrison**, who has been in the engineering department of the Ingersoll-Rand Company for a number of years, has been appointed assistant manager of the same department.

Professor Max Buhle, of the Dresden Technical University, Dresden, Germany, has arrived in this country to study the American railroads, particularly from a technical point of view. Professor Buhle is particularly interested in locomotives and various types of cars, maintenance of way and engineering developments, the solution of terminal problems and the development of material handling machinery. He is desirous of receiving descriptive pamphlets and literature from the manufacturers of all kinds of railroad equipment and supplies, to be used in the compilation of a book which he has in preparation. He may be addressed in care of **Thomas Prosser & Son**, 15 Gold street, New York.

H. P. Anderson has been appointed mechanical engineer of the **Standard Stoker Company, Inc.**, with office at Erie, Pa. Mr. Anderson has had considerable experience in designing, pattern, foundry and machine shop practice. He is a graduate of Drexel Institute, Philadelphia. He served as mechanical engineer for four years with the Baldwin Locomotive Works, for one and one-half years with the Erie Railroad and for eleven years as mechanical engineer of the Wabash, from which road he went to the Missouri-Kansas-Texas as mechanical engineer. Mr. Anderson was promoted to superintendent of motive power and later mechanical assistant to chief operating officer, which latter position was abolished at the termination of its receivership.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has revised its plans for the construction of a passenger station at Canyon, Tex., and will soon call for new bids for the work.

BALTIMORE & OHIO.—This company, which is planning the construction of a new terminal in the vicinity of East St. Louis, Ill., as reported in the *Railway Age* of July 5, will undertake no work of magnitude on this project for several months. Two additional tracks adjacent to the main line, to supplement the small existing yard, have been completed.

BOSTON & MAINE.—This company has authorized improvements to its engine terminal at Springfield, Mass., to cost approximately \$44,000.

CANADIAN PACIFIC.—This company has awarded a contract to Carter, Hall & Aldinger, Winnipeg, Man., for the construction of a 280-room extension to its hotel at Lake Louise, Alta.

CHESAPEAKE & OHIO.—This company is calling for new bids for the construction of a passenger station at Ashland, Ky.

LOUISVILLE & NASHVILLE.—This company will call for bids in November for the construction of buildings to be erected in conjunction with the enlargement of the Gentilly yards, New Orleans, La., reported in the *Railway Age* of July 26. All work in connection with this project, except the construction of buildings, will be carried out with company forces.

NEW YORK CENTRAL.—This company has awarded contracts to the Walsh Construction Company for the following: Tunnel elimination $2\frac{1}{4}$ miles north of Camelot, N. Y., \$174,000; replacement of a bridge at Beaver River, N. Y., \$194,000. A contract has been awarded to Marshall, Brown & Fleming for turbine piping and auxiliary piping for a 20,000 kw. turbine at Port Morris, N. Y., to cost approximately \$37,000. A contract for the reconstruction of a highway bridge to cost approximately \$82,000 at Hoffmans, N. Y., has been awarded to William M. Ballard. A contract has been awarded to the L. M. Neckerman Company, Inc., for the construction of a substation at Wakefield, N. Y., to cost approximately \$41,000. A contract for a standby lighting battery at Substation 1-A, Fiftieth street, New York City, to cost \$131,000, has been awarded to the Electric Storage Battery Company.

PENNSYLVANIA.—This company plans the construction of a 29-stall enginehouse in East Toledo, Ohio, to cost approximately \$500,000.

PENNSYLVANIA.—This company has purchased land at its intersection with Main street in Toledo, Ohio, for the separation of a grade at that point.

ST. LOUIS-SAN FRANCISCO.—This company has completed plans for the construction of a passenger station at Fayetteville, Ark., to cost \$100,000.

ST. LOUIS-SAN FRANCISCO.—This company has revised its plans for the construction of a brick passenger station at Neodesha, Kan., bids for which were taken in July and will soon call for new bids.

TAMPICO & NORTHERN.—This company, of which Albert Steves of San Antonio, Tex., is president, has been granted permission by the Mexican government to construct a standard-gage railroad from Tampico, Mex., to San Antonio, Tex., a distance of approximately 550 miles.

VIRGINIAN.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of a freight and passenger station at Salem, Va. This company has also awarded a contract to Joseph E. Nelson & Sons for the construction of a concrete scale pit at Roanoke, Va.

WABASH.—This company has awarded a contract to Hugh J. McDonald, Decatur, Ill., for the construction of an addition to the Wabash Employees' Hospital at Decatur, to cost \$77,000. The addition will be 40 ft. by 140 ft. and two stories in height.

Railway Financial News

ANN ARBOR.—*Final Valuation.*—The Interstate Commerce Commission has issued a final valuation report on this company's property as of June 30, 1915, finding no justification for modifying the valuations as reported in the tentative report, and stating the final value for rate making purposes as of that date as \$11,127,277 for the property owned and used for common carrier purposes. The outstanding capitalization on valuation date was \$17,271,538 and the investment in road and equipment as stated in the books was \$17,319,271. This the commission readjusts to \$17,300,689, which it says represents for the most part the par value of securities issued by the carrier in the acquisition of properties that it absorbed. The cost of reproduction new of the property owned is estimated at \$12,340,735 and that of the property used at \$12,428,744, while the cost of reproduction less depreciation is placed at \$9,865,733 for the property owned and \$9,915,040 for the property used.

ATLANTIC COAST LINE.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$12,797,073 as compared with \$11,604,074 in 1922. A selection of the principal items in the income account follows:

	1923	1922
Freight	\$56,580,484	\$48,857,558
Passenger	17,995,083	15,871,367
Total operating revenues	80,882,311	70,823,345
Maintenance of way and structures	10,191,289	8,434,956
Maintenance of equipment	17,349,030	14,297,181
Traffic	1,367,842	1,276,123
Transportation	28,814,876	26,018,260
General	1,756,208	1,649,687
Total operating expenses	59,868,428	52,033,448
Net revenue from railway operations	21,013,882	18,789,897
Railway tax accruals	5,425,000	4,275,000
Total operating income	15,546,425	14,433,024
Total non-operating income	4,984,325	4,907,868
Gross income	20,530,750	19,340,892
Total deductions	7,733,677	7,736,818
Net income for year	12,797,073	11,604,074
Income applied to sinking and other reserve funds	25,617	21,877
Income appropriated for investment in physical property	250,566	144,124
Income balance	12,520,890	11,438,073

Lease Accepted.—See Carolina, Clinchfield & Ohio, item below.

BOSTON & MAINE.—*Abandonment.*—This company and the Nashua & Acton have applied to the Interstate Commerce Commission for authority to abandon the line of the latter company from Nashua, N. H., to North Acton, Mass., 20 miles.

BUFFALO, ROCHESTER & PITTSBURGH.—*Bonds.*—The Interstate Commerce Commission has authorized this company to sell \$3,000,000 of consolidated mortgage $4\frac{1}{2}$ per cent bonds at not less than 85.

CAROLINA, CLINCHFIELD & OHIO.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$1,009,878 as compared with \$1,137,367 in 1922. A selection of the principal items in the income account follows:

	1923	1922
Freight revenue	\$8,529,547	\$6,973,043
Passenger revenue	551,331	482,369
Total operating revenues	9,257,319	7,608,602
Maintenance of way and structures	942,975	890,359
Maintenance of equipment	2,631,855	1,621,632
Traffic	302,808	263,707
Transportation	2,536,396	2,011,720
General	242,856	231,823
Total operating expenses	6,653,392	5,015,787
Net revenue from railway operations	2,603,927	2,592,816
Railway tax accruals	600,000	565,000
Railway operating income	2,001,979	2,027,036
Net railway operating income	2,709,145	2,864,428
Gross income	2,880,289	3,024,363
Total deductions from gross income	1,570,411	1,586,996
Net income (exclusive of interest on income debentures)	1,309,878	1,437,367
Interest on income debentures	300,000	300,000
Net income	1,009,878	1,137,367

Lease Accepted.—The directors of the Atlantic Coast Line and its subsidiary, the Louisville & Nashville, on August 21 accepted the conditions imposed by the order of the Interstate Commerce Commission authorizing the lease of the Carolina, Clinchfield & Ohio for 999 years. For the terms and conditions of the lease see *Railway Age*, issue of June 21, 1924, page 1766.

(Continued on page 395)

Annual Report

Thirty-Fifth Report of the Great Northern Railway Company

To the Stockholders:

The Board of Directors submits the following report for the year ended December 31, 1923.

CAPITAL STOCK.

There has been no change during the year in the authorized share capital, same remaining at \$250,000,000, of which there had been issued to December 31, 1923

FUNDED DEBT.

There has been an increase of \$8,166,700 in the funded debt, as shown by statement on page 22, made up as follows:
By issue of 5 per cent. Trust Certificates-Great Northern Railway Equipment Trust-Series "B," dated September 1, 1923. Repayment in fifteen installments respectively on September 1, 1924, and on the first day of September in each year thereafter to and including September 1, 1938.....

Less—		
St. P. M. & M. Ry. Co. Consolidated Mortgage bonds redeemed through the operation of the Sinking Fund	\$38,000.00	
Note maturing January 15, 1923, under Equipment Trust Agreement, dated January 15, 1920	286,300.00	
Note maturing November 1, 1923, under loan from the U. S. Government, made November 1, 1920.	134,000.00	458,300.00
Net increase		\$8,166,700.00

GREAT NORTHERN RAILWAY EQUIPMENT TRUST, SERIES "B."

This trust was created by agreement dated September 1, 1923, to which the Great Northern Equipment Company, The First National Bank of the City of New York, Trustee, and the Great Northern Railway Company are parties. Under the trust \$8,625,000 of 5 per cent. equipment trust certificates maturing in equal annual installments of \$575,000 over a period of fifteen years are issuable, representing approximately 75 per cent. of the cost of the equipment leased by the Trustee to the railway company. The equipment under the trust consists of fifty-eight locomotives and thirty-one hundred and twenty-five freight cars of various types, estimated to cost \$11,500,000. These certificates were sold for cash at 94¼ per cent. and accrued interest.

CONSOLIDATION.

The Transportation Act directs the Interstate Commerce Commission to adopt a plan for the consolidation of the railway properties of the country into a limited number of systems. The statute contemplates that after such plan shall be adopted, the Commission may authorize specific consolidations in harmony therewith. With a view to adopting such a general plan of consolidation, the Commission has held hearings in various parts of the United States to ascertain the attitude of the public and the carriers on the various plans of consolidation which have been suggested.

At these hearings the representatives of the public and of shippers' organizations, as well as individual shippers and other citizens, have shown an impressive preference for preserving unimpaired the existing efficiency and established routes of trade which have been developed by the Burlington, Great Northern and Northern Pacific group, and for consolidating those properties in accordance with the statute. There was practically no adverse testimony directed against the view that it would be in the public interest to preserve the existing relations between these properties or against the proposal that the consolidation plan to be adopted by the Commission should provide for putting these properties into the same system.

The adoption of a general plan of consolidation now awaits the action of the Commission, the taking of testimony having been completed, final arguments made, and all briefs submitted.

VALUATION.

In October, 1923, the Interstate Commerce Commission began hearings on the protest of this Company against the tentative valuation of its property, as found by the Commission. These hearings have not yet been completed.

PENSION DEPARTMENT.

During the year the number of pensioners increased from 163 to 188, through the addition of 38 employees retired and a decrease of 13 through death. Pensions paid for 1923 amounted to \$74,667.37, and the aggregate amount of pensions paid from the beginning of the pension system, September 16, 1916, to date was \$303,888.96.

The Board respectfully calls the attention of the Stockholders to the reports of the President, of the Comptroller, with customary balance sheet and statistical tables, and of the Land Commissioner.

For the Board of Directors.

LOUIS W. HILL, Chairman.

June 30, 1924.

REPORT OF PRESIDENT.

To the Board of Directors:

On January 21, 1924, a brief report was sent to each shareholder giving income statistics for the year 1923 and commenting on salient facts concerning the year's operation. Similar statistics for the first six months of 1923 and 1924 will show approximately the following:

	1923	1924
Revenue from freight transportation.....	\$40,291,859	\$34,400,000
Revenue from passenger transportation.....	7,152,063	6,300,000
Revenue from mail, express and other transportation	5,099,783	5,000,000
Total railway operating revenues.....	\$52,543,705	\$45,700,000
Railway operating expenses.....	45,263,936	36,200,000
Net revenue from railway operations.....	\$7,279,769	\$9,500,000
Taxes	4,125,649	4,600,000
Equipment and joint facility rents (credit)....	1,137,150	900,000
Net railway operating income.....	\$4,291,270	\$5,800,000
*Other income.....	5,065,364	5,700,000

*Other income.....

Total income.....	\$9,356,634	\$11,500,000
Income deductions:		
†Interest and other deductions.....	8,433,512	8,900,000
Balance available for dividends.....	\$923,122	\$2,600,000

* Includes \$4,151,280 dividend from C. B. & Q. stock.

† Includes \$4,025,000 interest on bonds issued for purchase of C. B. & Q. stock.

The amount of net earned during the first six months of this year is not large compared to the gross revenue, but it must be borne in mind, in considering Great Northern operating statistics, that the net earnings during the last half of the year always constitute the major part of the net earnings for the entire year.

It is not possible at this time to forecast with any degree of accuracy the net results for 1924, because of the uncertainty of gross revenues during the last six months. Business generally is lighter than last year at this time, and the extent to which this business depression will continue necessarily will have a decided effect on net as well as on gross income.

Following is a report for the year ended December 31, 1923, with comments on current operations to June 30, 1924:

	1923	1922	1921
Net Railway Operating Income			
Average mileage of road operated.....	8,254.21	8,260.71	8,163.44
Transportation revenue	\$116,965,370	\$100,843,344	\$98,577,123
Incidental operating revenues.....	3,112,401	2,609,593	2,740,081
Total railway operating revenues.....	\$120,077,771	\$103,452,937	\$101,317,204
Railway operating expenses.....	86,750,523	79,636,038	80,496,913
Net operating revenue.....	\$33,327,248	\$23,816,899	\$20,820,291
Railway tax accruals.....	9,113,226	8,097,725	8,291,224
Uncollectible railway revenues.....	20,982	15,534	48,079
Railway operating income.....	\$24,193,040	\$15,703,640	\$12,480,988
Equipment rents—net credit.....	806,631	1,799,023	739,997
Joint facility rents—net debit.....	267,679	226,065	354,574
Net railway operating income....	\$24,731,992	\$17,276,598	\$12,866,411

The progressive increase in net railway operating income shown in the above tabulation is encouraging, particularly in view of the great increase in taxes, which were over a million dollars more in 1923 than in 1922. The general level of rates was lower in 1923 and the revenue received for each ton mile of freight and for each passenger mile, therefore, was substantially less in 1923 than in the other two years.

FREIGHT TRAFFIC.

A synopsis of the tons of freight moved and revenue received for the years 1923 and 1922 is given below.

Commodity	1923		1922		Increase	
	Tons	Gross Revenue	Tons	Gross Revenue	Tons	Gross Revenue
Products of agriculture	6,352,483	\$29,846,510	5,621,014	\$23,741,977	731,469	\$6,104,533
Animals and products ..	505,942	3,436,271	441,906	2,941,991	64,036	494,280
Products of mines	22,222,252	21,610,937	15,527,718	17,078,518	6,694,534	4,532,419
Products of forests ...	4,100,198	15,214,616	3,051,634	12,504,910	1,048,564	2,709,706
Manufactures and miscellaneous ..	3,204,521	23,563,813	2,808,315	21,798,167	396,206	1,765,646
Total	36,385,396	\$93,672,147	27,450,587	\$78,065,563	8,934,809	\$15,606,584

Tons of agricultural products handled increased 13 per cent. over 1922, the principal increases being in wheat, potatoes and fruit. The wheat crop in 1923, however, was smaller than in 1922, but there is always a considerable part of the crop handled in the following year and this carry over tonnage was larger than normal in 1923, because cars were held in the East during the latter months of 1922. The 1923 fruit crop in the Wenatchee District was the largest on record, totaling 20,000 cars. Of these, 7,800 cars moved in the month of October, 1923. The potato crop, principally in Minnesota and North Dakota, also was very large, amounting to 25,000 cars.

There was an increase of 14.5 per cent. in tonnage of animals and products handled in 1923 over 1922. Farmers are producing more cattle, sheep, hogs and poultry. The states of Minnesota, North Dakota and Montana report an increase in live stock during 1923 as follows:

	Minnesota	North Dakota	Montana
Cows	33,000	30,000	21,000
Hogs	280,000	85,000	35,000
Sheep	28,000	14,000	100,000

PASSENGER TRAFFIC.

By virtue of a contract with the Pullman Company that Company's service replaces Great Northern sleeping car service. A large amount of new specially designed and specially constructed equipment was provided by the Pullman Company under this contract, and made possible the inauguration, on June 1, 1924, of a newly equipped trans-continental train, the Oriental Limited, with distinctive de luxe appointments. The purchase of 28 large oil burning locomotives, late in 1923, played an important part in the inauguration of this new service, and in otherwise establishing an exceptionally high standard of passenger train service. These locomotives add to travel comfort and to operating efficiency, in that they have great reserve power, enabling them to start the heaviest trains quickly and to maintain uniform speeds up hill and down, thereby avoiding excessive running and jerking and jarring the trains on starting, and also obviating the necessity for helper engines. The use of fuel oil instead of coal eliminates cinders.

Features of the new cars are their quietness, their elegance of appointment and their qualities of easy riding. The scheme of interior decoration is uniform, including the new dining cars. Gray-green backgrounds,

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decorative paneling with gilt and colors, and restful harmonious tints in the upholstery, window shades, and carpets are used. The berths are exceptionally high and long and the mattresses thick and soft. Another departure is the greater provision for the comfort and convenience of women travelers, a bath room for women being provided, as well as one for men, and the women's dressing rooms being much larger than standard, and more like the men's wash rooms in size; there is also provided a special lounge room for women in the observation car, in which they are privileged to smoke. Cleanliness, quiet and convenience, added to the elegance of surroundings, make this train a superb vehicle for the trans-continental journey. Cleanliness is contributed to by the use of oil for locomotive fuel on eleven hundred miles, or half the journey from Chicago to Portland; Seattle or Tacoma—the longest cinderless mileage of any railroad in the Northwest. Greater privacy and quietness is achieved through the improved details of design and improved construction methods used by the Pullman Company in the new cars. The Glacier Park Limited, another fine trans-continental train, is provided with equipment of the regular Pullman standard, and carries also a compartment observation car. It is, therefore, a high-class train in every respect. Other trains are provided with standard Pullman service adequate for the requirements. The maintenance and even the improvement of the present high standard of excellence, which has been established through special efforts of the Dining Car Department for the past several years, is insured by the purchase of ten additional dining cars of the finest and most modern type. Dining car crews are provided with sleeping quarters in another part of our trains and are only in the dining cars during the hours of service. Through passenger travel on the Great Northern is showing a very satisfactory increase.

OIL DEVELOPMENT IN MONTANA

The extension of the use of oil for locomotive fuel has been made practicable by the further development of the oil industry in Montana. Passenger trains on 2,000 miles of the Great Northern are now handled with oil burning locomotives. Development was continued in the Kevin-Sunburst field, located on the Company's line extending north from Shelby, Montana. During the year 1923 the number of oil wells was increased from 30 to 130.

IMMIGRATION AND AGRICULTURAL DEVELOPMENT.

Several years of unprecedented dry weather and unfavorable natural conditions for growing satisfactory yields of grain have had an important influence in developing a system of farming adapted to the conditions which have prevailed in some parts of the Northwest, particularly in parts of Montana. Homesteaders took up 29,000,000 acres of public lands during the ten years prior to 1917. A large portion of those who had no previous farming experience and were without sufficient resources left as soon as they could prove up on their land. The settlers who had previous farming experience and who have remained upon their land have realized the benefits from the more scientific farming methods and a return of more favorable crop growing seasons. In every locality where settlers had left their land during the dry seasons many have returned and are returning to develop permanent homes. The Agricultural Department of the State is rendering great service by promulgating information as to proper farming methods for the different localities.

The fact that in 1923, Montana produced 40,000,000 bushels of spring wheat of the highest bread making quality, which is more than was produced by any other state in the Union, being the largest crop of wheat in the history of the State, is evidence that the State has made substantial agricultural progress.

A large number of settlers who are experienced in farming under irrigation have located in the Milk River Valley and other irrigation projects. A large amount of land, heretofore undeveloped or used only for native hay, is now beginning to grow corn, beans, potatoes, sugar beets, and alfalfa. Dairying and hog raising are showing substantial progress. Only settlers who are fitted by experience to succeed are likely to locate in Montana in the future.

There is a renewed interest in Minnesota, North Dakota, Montana, and the states farther west, and the prospects are for an increased immigration in the future. There is an extensive development in the diversified farming idea and the benefits can already be seen in all of the states in our territory, and conditions for the future appear favorable.

WESTERN FRUIT EXPRESS COMPANY.

Effective September 1, 1923, the 5,500 Great Northern owned freight refrigerator cars were leased to the Western Fruit Express Company. The Great Northern is to receive from that Company a supply of refrigerator cars and the Express Company will furnish all protective service in connection with the transportation of perishable freight.

The Western Fruit Express Company and the Fruit Growers Express Company, which own or control 16,500 refrigerator cars, cooperate in handling perishable freight. As the Fruit Growers Express operates in the southeastern part of the United States, its seasonal demand for refrigerator cars is greatest during the periods when the Great Northern's demand is least, the arrangement works to the mutual advantage of these two companies, the Great Northern and the railway companies interested in the Fruit Growers Express. The Western Fruit Express Company is building 1,000 new refrigerator cars and the Fruit Growers Express Company is building 2,700, all of which will be available for the Great Northern perishable freight business in 1924.

MAINTENANCE OF TRACK, STRUCTURES, AND EQUIPMENT.

The program for improving and perfecting the physical property has been carried along, all relaying being done with heavy rail. At the end of this season there will be 200 miles of track laid with 100 and 130 lb. rail. Of even more importance than weight of rail, however, is the fact that the Great Northern's track has 20 ties, 7 inches thick and 9 inches wide to every rail length, i. e., more and larger ties than are customarily used. Especial attention is being given to drainage of roadbed and better ballasting.

In 1923, the American Railway Association, through a concerted movement, undertook to reduce the unserviceable freight cars to 5 per cent., and unserviceable locomotives to 15 per cent. On October 1, 1923, the beginning of the peak of the heavy fall demand for transportation, less than 5 per cent. of the Company's freight cars and less than 15 per cent. of its locomotives were out of service awaiting repairs. In fact, the number of bad order cars and locomotives was and is as low as is economically practicable.

GROUP INSURANCE.

On April 1, 1923, the Company put into effect a group insurance plan, for the protection of its employees in the shops and storehouses, as well as for linemen and supervisory forces in the operating and mechanical departments. Agreement was made with the Metropolitan Life Insurance Company, and the premiums are borne partly by the Company and partly by the insured.

At the close of the year over 6,000 employees had taken advantage of the plan with an aggregate life and accident insurance in force of \$6,865,500, and the same amount for accidental death and dismemberment.

EQUIPMENT.

Total amount expended for equipment purchased, built at shops, and for improvements to equipment in service, was \$17,930,368.89. The original cost of the equipment taken out of service, conversions and adjustments, amounts to \$6,161,182.11, resulting in a net increase in investment in equipment of \$11,769,186.78.

All equipment contracted for 1923 delivery has been received except 8 Santa Fe type freight locomotives, 50 automobile cars, 1-34 foot baggage trailer car, and 4 locomotive tenders.

Additional equipment for 1924 delivery has been contracted for or will be constructed at Company shops as follows: 2 locomotive cranes, 25 steel underframe caboose cars, 100 logging flats, 150-50 ft.-100,000 lb. capacity automobile cars, 1,000-36 ft. stock cars, 10 dining cars, 50 express refrigerator cars, 15 Mikado type locomotives, 4 switching locomotives and 250 steel ore cars.

ADDITIONS AND BETTERMENTS.

The following is a list of the more important additions and improvements made to the property during the year:

New engine terminal, storehouse, etc., at St. Cloud, Minnesota,
Passenger engine terminal at Fargo, North Dakota,
Addition to engine terminal at Watertown, South Dakota,
Fuel oil plants, 65,000 gallon capacity with 12,000 gallon steel sump, pump houses and pumps at Cut Bank, Whitefish, Essex, and Troy, Montana,
Car repair shops, lumber shed, storehouse, and office building at Hamline, Minnesota, to provide facilities for Western Fruit Express Company,
37.37 Miles of second track,
74.54 Miles of right of way fence and 34.32 miles of woven wire placed on existing fence,
347.88 Miles of automatic block signals installed,
Completion of replacement of ore dock No. 2 at Allouez, Wisconsin,
Tunnel No. 12, near Teton, Montana, 532 feet lined with concrete,
1,045 Lineal feet single track and 330 lineal feet double track snow sheds rebuilt,
3,976 Lineal feet of bridges filled,
1,734 Lineal feet of new steel and concrete bridges,
1,048 Lineal feet of steel bridges reinforced,
1,768 Lineal feet of combination concrete and timber culverts placed,
332 Miles of telegraph pole line reconstructed.

INVESTMENT IN ROAD.

Net charges during the year totaled \$7,537,450.21.

Some of the more important improvements in progress or which are contemplated are: Grade separation in Minneapolis; second track, Lohman to Havre, 13.4 miles; second track, Kootenai Falls to Troy, 7.4 miles on 0.4% grade replacing present 0.8% pusher grade; 203 miles automatic block signals—Wolf Point to Havre; change of line—Talbot; change of grade on Mesabi Division, reducing eastbound grade against ore traffic from 0.3% to 0.2%; change of grade on Spokane Division, reducing eastbound grade between Scotia and Newport, from 0.6% to 0.4%, and shortening pusher district; reducing eastbound grades at various points between Troy and Spokane from 0.6% and 0.5% to 0.4%; rearranging and installing additional icing facilities at Willmar, New Rockford, Wolf Point, and Whitefish; enlarging of engine terminals at Allouez, Superior, Minot, Williston, and Havre; automatic train stop or train control between Minot and Williston, 121 miles; 3,930 lineal feet timber bridges to be replaced with steel and concrete; 3,870 lineal feet steel bridging reinforced; extending passing and yard tracks on the Mesabi, Willmar, and Minot Divisions.

DISTRIBUTION OF STOCK.

There are outstanding 2,494,771 shares of Great Northern stock, of the par value of \$100.00 each. On December 31, 1923, those shares were owned by 43,000 men and women in all walks of life, and by 1,800 organizations and institutions. The average number of employees in 1923 was 32,600. The wide distribution of the stock is shown in the following table:

28,700 held from 1 to 20 shares each.
12,700 held from 21 to 100 shares each.
Only 3,400 held over 100 shares each.
The average holding is 55.8 shares.

EMPLOYEE STOCKHOLDERS.

On November 1, 1923, opportunity was extended to employees to become stockholders in the Company, on a partial payment plan. In the purchase of stock for employees the Company merely acts as their agent, buying the stock in the open market, and advancing the funds required to purchase and carry the stock. Payments are made by the employees through monthly payroll deductions and interest adjustment is made at the time final payment is completed. A large number of employees already were stockholders of the Company and in addition the Company has received orders from 1,027 employees for the purchase of 8,055 shares on the partial payment plan. The growing list of employee stockholders is a feature of mutual benefit to them and to the Company, as their welfare and that of the Company are interdependent.

Respectfully submitted,
RALPH BUDD,
President.

INCOME ACCOUNT.

	1923	1922	Increase— Decrease—D
Average mileage of road operated	8,254.21	8,260.71	D 6.50
OPERATING INCOME.			
Railway operating revenues	\$120,077,771.56	\$103,452,937.27	I \$16,624,834.29
Railway operating expenses	86,750,523.12	79,636,038.09	I 7,114,485.03
Net revenue from railway operations	\$33,327,248.44	\$23,816,899.18	I \$9,510,349.26
Railway tax accruals	9,113,226.60	8,097,725.33	I 1,015,501.27
Uncollectible railway revenues	20,981.83	15,534.14	I 5,447.69
Railway operating income	\$24,193,040.01	\$15,703,639.71	I \$8,489,400.30
Equipment rents—net credit	806,630.81	1,799,023.25	D 992,392.44
Joint facility rents—net debit	267,679.11	226,065.12	I 41,613.99
Net railway operating income	\$24,731,991.71	\$17,726,597.84	I \$7,455,393.87
NONOPERATING INCOME.			
Income from lease of road	\$1,458.58	\$162.96	I \$1,295.62
Miscellaneous rent income ..	512,659.19	451,784.68	I 60,874.51

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Miscellaneous nonoperating physical property	58,025.59	56,365.34	I	1,660.25
Dividend income	8,403,519.37	8,527,118.53	D	123,599.16
Income from funded securities	552,287.05	439,221.47	I	113,065.58
Income from unfunded securities and accounts.....	440,670.33	929,517.70	D	488,847.37
Miscellaneous income.....	344,640.66	82,835.39	I	261,805.27
Total non-operating income.....	\$10,313,260.77	\$10,487,006.07	D	\$173,745.30
Gross income	\$35,045,252.48	\$27,763,603.91	I	\$7,281,648.57
DEDUCTIONS FROM GROSS INCOME.				
Rent for leased roads.....	\$116,622.98	\$106,412.74	I	\$10,210.24
Miscellaneous rents	16,301.18	12,990.45	I	3,310.73
Miscellaneous tax accruals.....	100,837.28	125,845.69	D	25,008.41
Interest on funded debt.....	16,348,338.68	16,242,952.65	I	105,386.03
Interest on unfunded debt.....	212,483.40	236,008.53	D	23,525.13
Amortization of discount on funded debt	123,495.04	112,276.78	I	11,218.26
Miscellaneous income charges	59,226.46	61,444.88	D	2,218.42
Total deductions from gross income	\$16,977,305.02	\$16,897,931.72	I	\$79,373.30
Net income	\$18,067,947.46	\$10,865,672.19	I	\$7,202,275.27
DISPOSITION OF NET INCOME.				
Income applied to sinking and other reserve funds.....	\$11,122.88	\$20,519.66	D	\$9,396.78
Dividend appropriations of income	12,473,605.00	13,097,264.25	D	623,659.25
Total appropriations of income	\$12,484,727.88	\$13,117,783.91	D	\$633,056.03
Balance ..	\$5,583,219.58	Dr. \$2,252,111.72	I	\$7,835,331.30

*Income from funded securities. Eliminating from this account the interest on S. P. & S. Ry. Co.'s bonds (accrued in 1921), still unpaid Dr. 5,227,721.36 D 5,227,721.36

Income balance transferred to Profit and Loss..... \$355,498.22 Dr. \$2,252,111.72 I \$2,607,609.94

"The charge of \$5,227,721.36 to "Income from funded securities" should not be considered in determining the amount earned by the Company during the year 1923, as it is solely a book adjustment having no effect in the cash account. The net income earned during the year was \$18,067,947.46, which is a return of 7.24% on the outstanding capital stock.

PROFIT AND LOSS ACCOUNT.

DECEMBER 31, 1923.

To		
Unrefundable overcharges		\$2,002.23
Surplus applied to sinking and other reserve funds.....		10,903.79
Surplus appropriated for investment in physical property..		467,711.30
Debt discount extinguished through surplus.....		6,343.74
Loss on retired road and equipment.....		560,790.27
Miscellaneous debits		653,593.29
Balance December 31, 1923.....		86,257,679.37
		\$87,959,023.99
By		
Balance December 31, 1922.....		\$86,843,003.54
Credit balance transferred from income.....		355,498.22
Profit on road and equipment sold.....		234,271.77
Donations		93,959.88
Miscellaneous credits		432,290.58
		\$87,959,023.99

GENERAL BALANCE SHEET.

December 31, 1923	ASSETS.	December 31, 1922	December 31, 1923	LIABILITIES.	December 31, 1922
	INVESTMENTS.			STOCK.	
\$356,585,538.43	Investment in road and equipment:		\$249,478,250.00	Capital stock—Book liability.....	\$249,478,250.00
104,954,549.69	Road	\$349,089,395.23	1,100.00	Less—Held by or for carrier.....	1,100.00
	Equipment	93,185,362.91			
\$461,540,088.12		\$442,274,758.14	\$249,477,150.00	Outstanding	\$249,477,150.00
126,778.42	Improvements on leased railway property..	85,471.41	81,268.44	Premium on capital stock.....	81,268.44
1,391.40	Sinking funds	808.15		Total stock	\$249,558,418.44
39,294.62	Deposits in lieu of mortgaged property sold	32,985.74	\$249,558,418.44		
3,668,659.95	Miscellaneous physical property.....	4,377,590.28		GOVERNMENTAL GRANTS.	
			\$335,138.12	Grants in aid of construction.....	\$289,454.33
\$184,710,834.36	Investments in affiliated companies:		\$375,246,509.09	LONG-TERM DEBT.	
26,818,600.50	Stocks	\$181,833,121.10	76,150,393.93	Funded debt unmatured.....	\$367,079,809.09
1,675,516.43	Bonds	26,787,600.50		Less—Held by or for carrier.....	76,150,393.93
18,331,336.00	Notes	1,673,316.43	\$299,096,115.16		\$290,929,415.16
	Advances	15,642,644.88	533,786.20	Non-negotiable debt to affiliated companies.	570,553.88
\$231,536,287.29		\$225,936,682.91	\$299,629,901.36	Total long-term debt.....	\$291,499,969.04
	Other investments:			CURRENT LIABILITIES.	
\$1,282,023.93	Stocks	\$1,284,720.93	\$11,500,000.00	Loans and bills payable.....	\$6,500,000.00
2,079,180.00	Bonds	8,825,885.20	822,669.93	Traffic and car-service balances payable..	461,865.37
564,037.63	Notes	872,504.00	5,851,868.27	Audited accounts and wages payable.....	7,827,541.74
88,748.72	Advances	76,432.52	15,581,694.63	Miscellaneous accounts payable.....	7,890,019.66
1,926,313.69	Miscellaneous	1,130,222.02	7,605,476.95	Interest matured unpaid.....	7,637,493.23
			24,231.25	Dividends matured unpaid.....	23,747.25
\$5,940,503.97		\$12,189,764.67	1,200.00	Funded debt matured unpaid.....	1,200.00
			479,225.67	Unmatured interest accrued.....	282,188.92
\$702,853,003.77	Total investments	\$684,898,061.30	162,611.41	Other current liabilities.....	169,192.24
			\$42,028,978.11	Total current liabilities.....	\$30,793,248.41
	CURRENT ASSETS.			DEFERRED LIABILITIES.	
\$17,581,995.61	Cash	\$14,005,364.07	\$11.60	U. S. Government deferred liabilities.....	\$63,126.85
35,000.00	Demand loans and deposits.....	35,000.00	11,254,966.84	Other deferred liabilities.....	4,607,983.69
755,000.00	Time drafts and deposits.....	5,550,000.00		Total deferred liabilities.....	\$4,671,110.54
9,595,007.32	Special deposits	1,062,206.57	\$11,254,978.44		
24,492.55	Loans and bills receivable.....	9,115.09		UNADJUSTED CREDITS.	
1,522,982.77	Traffic and car-service balances receivable.	1,521,858.63	\$6,788,455.42	Tax liability	\$5,204,362.05
2,848,461.35	Net balance receivable from agents and conductors	3,230,658.30	2,173,619.66	Insurance and casualty reserves.....	2,152,408.39
11,081,519.59	Miscellaneous accounts receivable.....	10,784,209.89	606,493.15	Operating reserves	286,063.15
11,050,760.07	Material and supplies.....	8,120,092.07	2,353,882.61	Accrued depreciation—Road	2,145,382.06
86,895.69	Interest and dividends receivable.....	6,150,180.50	31,958,766.22	Accrued depreciation—Equipment	33,142,076.28
100,429.21	Other current assets.....	122,132.60	14,571.87	Accrued depreciation—Miscellaneous physical property	10,066.01
\$54,682,544.16	Total current assets.....	\$50,590,817.72	5,769,753.70	Other unadjusted credits.....	3,962,387.94
			\$49,665,542.63	Total unadjusted credits.....	\$46,902,745.88
	DEFERRED ASSETS.			CORPORATE SURPLUS.	
\$32,373.35	Working fund advances.....	\$48,634.84	\$37,051,514.29	Additions to property through income and surplus	\$37,200,456.93
11,089,951.26	Other deferred assets.....	4,176,900.00	1,485,857.14	Funded debt retired through income and surplus	1,450,025.39
\$11,122,324.61	Total deferred assets.....	\$4,225,534.84	13,448.28	Sinking fund reserves.....	17,693.34
			1,538,665.01	Appropriated surplus not specifically invested	925,921.93
	UNADJUSTED DEBITS.			Total appropriated surplus.....	\$39,594,097.59
\$39,457.52	Rents and insurance premiums paid in advance	\$33,884.99	\$40,089,484.72	Profit and loss.....	86,843,003.54
3,027,152.78	Discount on funded debt.....	2,646,387.91	86,257,679.37	Total corporate surplus.....	\$126,437,101.13
7,095,638.35	Other unadjusted debits.....	7,757,361.01	\$126,347,164.09	Grand Total	\$750,152,047.77
\$10,162,248.65	Total unadjusted debits.....	\$10,437,633.91	\$778,820,121.19		
\$778,820,121.19	Grand Total	\$750,152,047.77			

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(Continued from page 391)

CHARLESTON, S. C.—*Lease of Terminal Facilities.*—The Port Utilities Commission of Charleston, S. C., has applied to the Interstate Commerce Commission for authority to acquire by lease from the United States Shipping Board and to operate in interstate and foreign commerce certain railroad facilities serving the army base at Charleston, including 19.73 miles of terminal tracks.

CHICAGO, BURLINGTON & QUINCY.—*Appointment of Trustee.*—Walter S. McClucas of Kansas City, Mo., has been appointed individual trustee under the general mortgage of the Chicago, Burlington & Quincy to fill the vacancy caused by the death of O. M. Spencer on June 5.

CHICAGO, ROCK ISLAND & PACIFIC.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue \$5,000,000 of five-year 5 per cent secured gold notes, the proceeds to be used for general corporate purposes and to reimburse the treasury, which have been sold to Speyer & Co., at 97.50.

Acquisition.—The Chicago, Rock Island & Pacific and the St. Paul & Kansas City Short Line have applied to the commission for authority to acquire the railroad formerly owned by the Keokuk & Des Moines, from Keokuk to Des Moines, Ia., 153 miles, which has been operated by the Rock Island under a lease which expired December 31, 1923. The Rock Island also asked authority to issue and deliver to the bondholders' protective committee of the Keokuk & Des Moines \$2,694,000 of first and refunding 4 per cent gold bonds and to convey the property to the St. Paul & Kansas City Short Line, the stock of which is owned by the Rock Island. The latter company also asked authority to issue and deliver to the Rock Island in payment for the property \$2,694,000 of first mortgage 4½ per cent gold bonds and not to exceed \$4,100,000 of its capital stock. Authority was also asked to include the Keokuk line in the 99-year lease of the Short Line company's property to the Rock Island.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a balance of income over charges of \$2,651,961 as compared with \$125,199 in 1922. A selection of the principal items in the income account follows:

	1923	1922
Freight revenue	\$17,407,412	\$12,599,962
Passenger	4,520,807	3,330,278
Total operating revenues	23,049,393	16,801,374
Maintenance of way and structures	3,134,703	1,938,245
Maintenance of equipment	5,185,537	4,308,898
Traffic	460,592	351,867
Transportation	7,052,468	6,125,702
General	558,035	498,457
Total operating expenses	16,522,285	13,331,264
Taxes	1,033,020	782,302
Operating income	4,856,706	1,910,018
Total non-operating income	351,198	277,861
Gross income	5,207,903	2,187,879
Deductions from gross income	1,575,241	1,551,311
Dividends of 5 per cent on preferred stock	122,670	122,670
Dividends of 13 per cent on common stock	388,700	388,700
Additions and betterments charged to income	469,332	.....
Balance carried to credit of Profit and Loss	2,651,961	125,199

DENVER & RIO GRANDE WESTERN.—*To Fix Price for Sale.*—Judge J. Foster Symes of the United States District Court at Denver, Colo., has set September 3 as the date for hearings on the subject of the fixing of the upset price for the Denver & Rio Grande Western.

FLORIDA EAST COAST.—*Securities.*—This company has applied to the Interstate Commerce Commission for authority to issue \$15,000,000 of first and refunding mortgage 5 per cent gold bonds, to be sold to J. P. Morgan & Co., at not less than 92, for the purpose of providing for the extension of facilities and to reimburse the treasury, and also to issue and distribute \$25,000,000 of additional stock as a stock dividend. The stock is to be issued to the trustees under the will of Mary Lily (Flagler) Bingham, who are also the holders of \$12,500,000 of outstanding stock, on condition of the prior gratuitous surrender for cancellation of \$25,000,000 of general mortgage bonds.

GREAT NORTHERN.—*Annual Report.*—This company's report for 1923 is reviewed in an article on another page entitled "Great Northern Continues to Evidence Promise." See also excerpts from annual report on adjacent pages.

KEOKUK & DES MOINES.—*Acquisition.*—See Chicago, Rock Island & Pacific.

LOUISVILLE & NASHVILLE.—*Bonds Offered.*—J. P. Morgan & Co. are offering \$16,000,000 refunding mortgage 4½ per cent bonds at 93½, to yield about 4.82 per cent. They mature in 2003. Proceeds from the sale of the bonds will be used for construction purposes. It is pointed out that this is the first railroad issue bearing a 4½ per cent coupon to be offered in this market in a long time.

Lease Accepted.—See Carolina, Clinchfield & Ohio, item above.

MARYLAND & DELAWARE COAST.—*Stock.*—This company has been authorized by the Interstate Commerce Commission to issue 17,500 shares of stock without par value, to be delivered to Jesse Rosenfeld in part payment for approximately 40 miles of railroad and other property formerly owned by the Maryland, Delaware & Virginia, and \$300,000 of first mortgage 20-year sinking fund 6 per cent gold bonds, to be sold at not less than 80 and the proceeds to be used to complete payment for the property.

MISSOURI PACIFIC.—*Control of N. O. T. & M.*—The Interstate Commerce Commission will hear oral argument at Washington on October 3 on this company's application for authority to acquire control of the New Orleans, Texas & Mexico and to issue \$18,000,000 of 7 per cent collateral trust notes.

ST. LOUIS-SAN FRANCISCO.—*Interest.*—The 3 per cent semi-annual interest on the adjustment mortgage bonds and the 6 per cent annual interest on income mortgage bonds has been declared payable October 1.

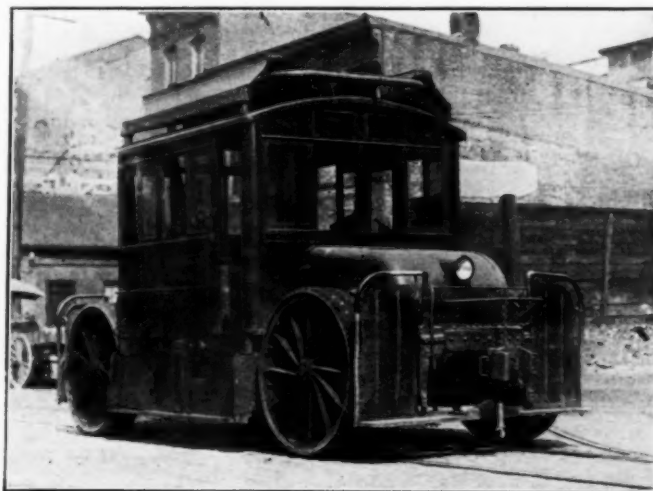
STATENVILLE.—*Abandonment.*—This company has been authorized by the Interstate Commerce Commission to abandon as to interstate and foreign commerce its line from Haylow to Statenville, Ga., 14 miles.

Dividends Declared

Bangor & Aroostook.—7 per cent cumulative preferred, 1¼ per cent, quarterly, payable October 1 to holders of record September 15.
Fonda, Johnstown & Gloversville.—Preferred, 1½ per cent, quarterly, payable September 15 to holders of record September 10.
Philadelphia & Trenton.—2½ per cent, quarterly, payable October 10.

Trend of Railway Stock and Bond Prices

	Aug. 26	Last Week	Last Year
Average price of 20 representative railway stocks	70.71	72.56	60.23
Average price of 20 representative railway bonds	87.50	88.55	82.70



P. & A.

A Trackless Gas-Electric Locomotive Used for Industrial Switching in Baltimore

Railway Officers

Executive

Frank E. Strouse has been appointed special representative of the vice-president of the Pennsylvania, with headquarters at St. Louis, Mo.

W. J. Kelleher, purchasing agent of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, with headquarters at New Orleans, La., has been promoted to assistant to the president, with the same headquarters, succeeding E. Ford, whose death on August 13 was reported in the *Railway Age* of August 16.

Traffic

H. B. Wood has been appointed division freight agent of the Cincinnati Northern, with headquarters at Jackson, Mich., succeeding J. W. Hewson, deceased.

F. O. Stafford, whose promotion to assistant freight traffic manager of the New York Central, lines west of Buffalo, with headquarters at Chicago, was reported in the *Railway Age* of August 23, was born on June 16, 1876, at Tiverton, Ont. He entered railway service in April, 1900, in the Merchants Dispatch Transportation Company, which is owned by the New York Central, and subsequently was promoted to various positions at Sioux City, Ia., Kansas City, Mo., Des Moines, Ia., and St. Louis, Mo. He was promoted to general westbound agent of the New York Central, with headquarters at Chicago, in January, 1911, and held this position until August, 1917, when he was promoted to manager of the Fast Freight Line, with the same headquarters. Mr. Stafford was appointed general freight and passenger agent of the Rutland, with headquarters at Rutland, Vt., in July, 1920, and remained in that capacity until his recent appointment as assistant freight traffic manager of the New York Central.



F. O. Stafford

C. C. Curtice, district passenger agent of the Pennsylvania, with headquarters at St. Louis, Mo., retired on pension on August 31 after 49 years of service with the Pennsylvania.

G. G. Carlisle, general manager of the Georgia Peach Growers' Exchange, has been appointed general freight agent of the Missouri Pacific, with headquarters at St. Louis, Mo.

W. B. Wheeler, general passenger agent of the United Fruit Company, with headquarters at Boston, Mass., has assumed the duties of the former passenger traffic manager, W. M. Lowrie, deceased.

G. C. Whitney, general eastern agent of the Texas & Pacific, with headquarters at New York, has been promoted to foreign freight agent, with headquarters at New Orleans, La., succeeding J. B. Webb, deceased. **B. M. Flippin** has been appointed general eastern agent, with headquarters at New York, succeeding Mr. Whitney.

Operating

W. R. Kirk has been appointed superintendent of the Alabama & Vicksburg and the Vicksburg, Shreveport &

Pacific, with headquarters at Vicksburg, Miss., succeeding J. C. Stamm, promoted.

H. A. Griffith has been appointed superintendent of the Alexandria-Cameron Terminals of the Southern, with headquarters at Cameron, Va., effective September 1.

J. C. Stamm, superintendent of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, has been promoted to assistant general manager, with headquarters at Vicksburg, Miss., a newly created position.

H. O. Kelley, whose appointment as general manager of the Toledo & Western, with headquarters at Sylvania, Ohio, was reported in the *Railway Age* of August 16, received his education in civil engineering at Rose Polytechnic Institute, and entered railway service in 1913 in the engineering department of the Chicago & Eastern Illinois. He was appointed engineer maintenance of way of the Evansville & Indianapolis in 1916 and remained in that position until 1918, when he was appointed assistant engineer on the Wabash. Mr. Kelley was promoted to division engineer of the St. Louis terminal in 1919 and in the following year was appointed special engineer. He was appointed division engineer of the Western division in 1921 and in 1923 was transferred to the Peru division. He remained in this position until his recent appointment as general manager of the Toledo & Western.

Mechanical

E. Posson, engineer of car construction of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, whose retirement was announced in the *Railway Age* of July 12, was born on July 3, 1860, at Port Washington, Wis. From 1875 to 1878 he learned the machinist's trade in a commercial shop at Port Washington and from the latter date until 1883 he was a pattern maker for the Milwaukee, Lake Shore & Western (now a part of the C. & N. W.) at Manitowoc, Wis. From 1883 to 1890 he was chief draftsman and from 1890 to 1892 he was superintendent of the Atlas Iron Works at New Duluth, Minn. On the latter date he entered the employ of the Northern Pacific as chief draftsman in the mechanical department at St. Paul, Minn. In 1903 he entered the employ of the Atchison, Topeka & Santa Fe as engineer of car construction, with headquarters at Topeka, Kansas, which position he held until his retirement, being transferred to Chicago on July 15, 1904.



E. Posson

Engineering, Maintenance of Way and Signaling

W. J. Harris, division engineer of the LaCrosse division of the Chicago, Burlington & Quincy, with headquarters at LaCrosse, Wis., has been appointed engineer maintenance of way of this division.

Obituary

A. M. Schoyer, manager of through freight traffic of the Pennsylvania, with headquarters at Philadelphia, Pa., died in Pittsburgh, Pa., on August 26.

Edson J. Chamberlin, who retired as president of the Grand Trunk in September, 1917, died at his home in Pasadena, Cal., on August 27, at the age of 72.